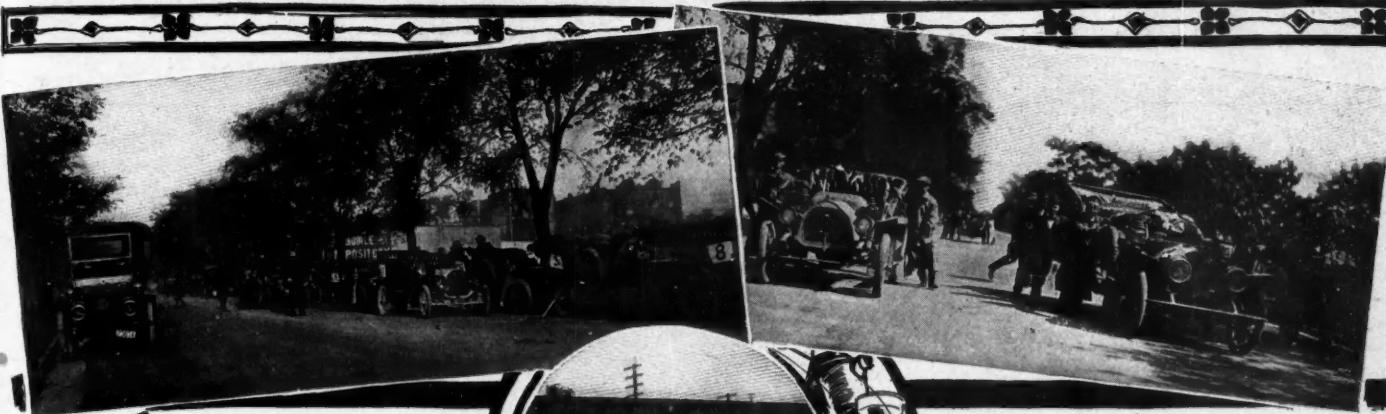


MOTOR AGE

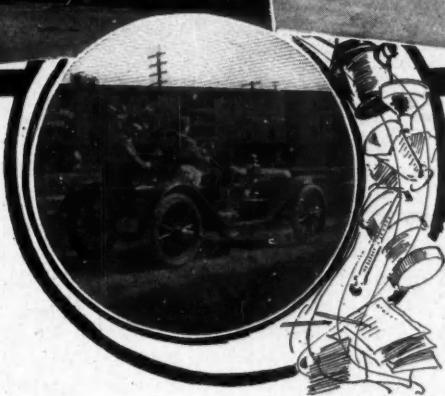
CHICAGO'S ECONOMY RUN WON BY PIERCE



CARS WAITING AT THE FINISH

MAN TAKES PLACE OF MOTOR

CHICAGO, Sept. 14—Friday and the 18th proved anything but a hoodoo for the Chicago Motor Club which yesterday successfully conducted the second annual economy test from Chicago to Valparaiso and return, a distance of 95 miles, in which twenty-four cars—every one that was entered—started. All but one finished inside the time limit. The finest the weather man had in his shop was dished up, the roads were in prime shape and the winner turned up in a 28-30-horsepower Pierce-Arrow, driven by Paul Hoffman, who duplicated last year's feat, it being the same make and same type of car that captured the glory in the run to Cedar Lake, Ind., in 1906. This



FORD PILOT CAR TRAINED

time, however, Hoffman did not come within 14 per cent of putting up as good a performance, his figures showing a fuel consumption of 4 gallons 2 quarts 11 ounces for 95 miles as against 2 gallons 23 ounces for 51 miles a year ago. Yesterday's trip shows 20.7 miles to the gallon as against 22 a year ago.

It was no walkaway for the Pierce, though, the Berliet being the closest kind of a contender. In fact it was a matter of pounds and ounces that separated them. The Pierce showed 4,545 pounds to the Berliet's 4,550 on the scales at Highlands and when it came down to fuel consumption it was discovered that the Pierce had made the 95 miles on just 4 ounces less gasoline than did the Knobbe car. This made the percentages 3.871 for the Pierce and 3.84 for the Berliet. The latter was a 24-horsepower machine which was entered by J. W. Knobbe and driven by John Buchanan.

Both the Pierce and the Berliet had two strings to their bows and both finished

inside the first ten. The second Pierce, which was Paulman's 45-horsepower demonstrator, ran third on 5 gallons 3 quarts and 20 ounces and the other Berliet, a 24-horsepower machine fitted with a limousine body and entered by Walden W. Shaw, the local agent, ran eighth with 6 gallons 2 ounces, considered a fine performance for a motor that pulled one of the heaviest loads in the contest.

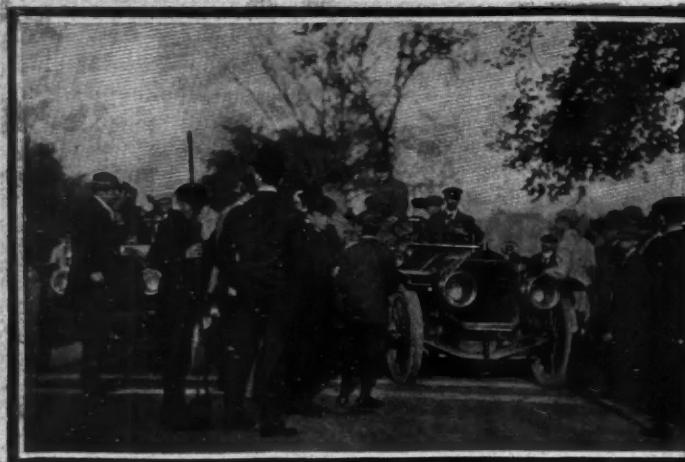
When it came down to a matter of actual fuel consumption the Ford four-cylinder runabout driven by Thomas J. Hay, manager of the local branch, excelled, Hay driving leisurely over the route and doing the distance on 2 gallons 3 quarts 15 ounces of gasoline, which fig-



TESTING SPECIFIC GRAVITY



SIPHONING ONE OF THE TANKS



FIRST CAR TO START—THE BIG PIERCE-ARROW



SCENE AT THE STARTING POINT OF RUN

ures up 33.1 miles to the gallon. Hay made no extra preparations for the contest, driving a model R fitted with a Kingston carburetor which he has used all season and his pace varying from as low as 10 to 35 miles an hour. In the touring car division George H. Bird's Corbin used the least gasoline, the official report giving him a consumption of 4 gallons 11 ounces.

This affair will be followed by another of similar nature which will be a sort of aftermath. It will be remembered that during the last Chicago show Charles Y. Knight, of Knight & Kilbourne, makers of the Silent Knight, issued a challenge to meet any other car of equal cylinder capacity in an economy test for \$500 a side. This was not accepted, but the whole matter finally simmered down until it resulted in Mr. Knight turning the \$500 over to the Chicago Motor Club for the purpose of promoting an economy contest for the Knight trophy. At first it had been intended to put up the trophy in the affair run yesterday, but the trip of Mr. Knight to Europe made this impossible. Now that he is back, though, it is proposed to have the economy test and the Chicago Motor Club has decided that the field shall be made up of the ten cars that made the best showing in the run yester-

day according to the handicap formula. This, therefore, qualifies the Hoffman Pierce-Arrow, the Buchanan Berliet, the Lawrence Pierce-Arrow, the Silent Knight, the Diamond T, the Locomobile, the Corbin, the Berliet, the Haynes and the McLain Apperson—all water-coolers except the Corbin. The Knight affair probably will be over a course 200 miles in length and will be run some time next month, it is believed.

Carefulness in every detail marked the running of yesterday's economy test. The technical committee of the club, David Beecroft and F. E. Edwards, made its plans in advance. The night before all the cars were parked at the starting point, Garfield boulevard and State street, where there is a large vacant lot adjacent to the garage of the Garfield Automobile Co. It speaks well for the scheme of the motor club in rebating half the entry fee in case of starting that every one of the twenty-four cars nominated reported. With the machines on the spot, the technical committee at once took time by the forelock, examining every one and filling the gasoline tanks. After this tarpaulins were pulled over the cars and they were left under the guard of three Pinkertons. It was decided not to seal the tanks that night because of possible evaporation and

condensation because of the change in atmosphere. This proved a wise precaution, for when the committee inspected the tanks the next morning it was discovered that during the night 18 gallons had mysteriously disappeared from the twenty-four tanks. In the Holsman, which has its tank back of the seat, 1 gallon more was needed to fill it to the brim.

The day of the run the sun came up to a brilliant morning. There was a warmth in the air that was in marked contrast to the weather of a week back, but under motion one did not notice the heat. The roads, too, were in the best of shape because of recent rain, so the contestants found it much pleasanter than in the test of a year ago, when the cars had to run through a heavy rain and over water-soaked roads. The twenty-four cars were pushed out on the road and lined up in the north drive of Garfield boulevard in numerical rotation. At the head was R. P. Rice in the Ford six-cylinder roadster, which had been selected as pilot car, while the two Pierces had been switched about, Lawrence starting off with the 45-horsepower machine, giving Hoffman his place as No. 6. At 7 o'clock the procession started, swinging through the park system, out past the South Shore Country club, through South Chicago, where the bad



PIERCE-ARROW BEEF TRUST LINED UP



WEIGHING STATION AT HIGHLANDS



TECHNICAL COMMITTEE FILLING TANKS



PUSHING CARS INTO THE PARKING SPACE

stretch was found to be fairly good; out through Hammond and onto the fine roads of Indiana. When the Hobart road was struck it was clear sailing from that point on. If there had been any doubt as to the right turns it was dispelled by the broad trail left by the confetti car. Bright red paper had been selected for the confetti and this could be seen on the road half a mile away. It really added to the scenic features of the trip, for the red on the road looked like autumn leaves at a distance.

The outgoing journey was marked by a number of cases of tire troubles. Paul Hoffman was one of the greatest sufferers in this respect, having three blowouts before he reached Valparaiso.

The piloting Ford reached Valparaiso in 2 hours 15 minutes and started to circle the public square, which was the turning point. The broad red trail had not been completed before the chief of police called a halt and insisted that H. Sargeant Michaels, who was checker at Valparaiso, see the mayor, the chief fearing the horses would become scared by the confetti. The mayor was found in front of a grocery store and proved a good fellow. He owns a Rambler himself and he could see no

harm in the red paper. Thereupon the chief withdrew his objections and the pilot car resumed its journey.

Louis Geyler in the Stevens-Duryea six-cylinder was the first one of the contesting cars to reach Valparaiso. Satisfied with this work, Geyler and his crew stopped to refresh the inner man, leaving the leadership to Jack Banta in the Locomobile, Banta having been close on Geyler's heels all the way. Going out of Valparaiso the pilot car passed along the line of the contesting cars and discovered that twenty-three of the machines were inside 10 miles of each other. Hoffman was the straggler and was 5 miles back of the twenty-third contestant. Everyone was running nicely, although more than one motor was starved so close that several cases of engine-killing were noted on the way back, most of them occurring on slight grades.

At Highlands on the way back there was a compulsory stop in order that Weighmaster Root might gather his statistics. He was located across the street from the sauerkraut factory and he caused somewhat of a sensation when he ruled that the observers would not be weighed with the car, passengers and drivers. Instead

each car was allowed 160 pounds as the average weight of the observer. Those who had drawn fat officials were glum and downcast, while those with skinny persons in the seat next the driver were in the opposite mood. This ruling almost resulted in a protest. The Silent Knight people had believed the observers would be weighed and so when a 220-pounder was assigned to them they were jubilant. They cheerfully carried the 60 extra pounds as far as Highlands, then when they found the fat gentleman could not get on the scales they were correspondingly gloomy. The matter went so far that a protest was drawn up, but finally Sales Manager Vorce concluded to tear it up. Really it made no difference in the standing of the Silent Knight, which finished a good fourth.

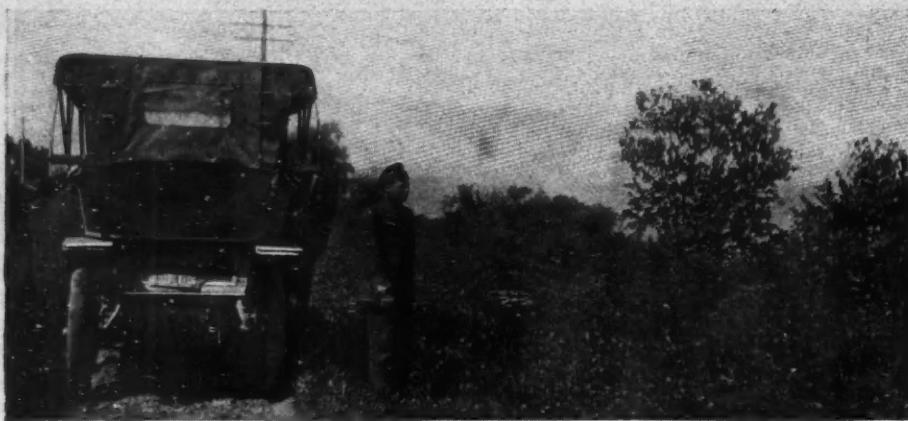
Not much of a crowd was gathered at the finishing point. The pilot car, with Banta at its heels, rolled over the tape at 11:45 a. m., having maintained the schedule of 20 miles an hour for the journey. Geyler came home a few minutes later, then there was a big gap. The Stevens-Duryea four did not finish inside the time limit because of tire troubles, having been driven the return trip from Valparaiso without tires on the rear wheels.

RESULTS OF CHICAGO MOTOR CLUB'S SECOND ANNUAL ECONOMY RUN TO VALPARAISO AND BACK

Pos.	No.	Car	Entrant	Driver	H.P.	Cyl.	Weight with load	Carburetor	Tires	Fuel Con- sumption Gal. Qt. Oz.	Per- centage	Mile per Gal.
1	• 6	Pierce-Arrow	H. Paulman & Co.	P. Hoffman	28-30	4	4645	Pierce	Goodrich	4 2 11	3.871	20.7
2	3	Berliet	J. W. Knobbe	J. Buchanan	24	4	4540	Berliet	Fisk	4 2 15	3.84	20.5
3	1	Pierce-Arrow	H. Paulman & Co.	J. V. Lawrence	45	4	5505	Pierce	Diamond	5 3 20	3.7	16
4	14	Silent Knight	Knight & Kilbourne	D. Kilbourne	35-40	4	4680	Schebler	{ Diamond and Continental	5 19	3.55	18.4
5	18	Diamond T.	C. A. Tilt	C. A. Tilt	40	4	4322	Schebler	Goodrich	5	3.37	19
6	15	Locomobile	A. J. Banta	A. J. Banta	20	4	3585	Locomobile	Diamond	4 1 23	3.16	21.4
7	12	Corbin	G. H. Bird	G. H. Bird	24	4	3245	Schebler	Diamond	4 11	3.102	23.2
8	5	Berliet, Limousine	W. W. Shaw	P. Grimm	24	4	4778	Berliet	Fisk	6 2	3.1	15.7
9	19	Haynes	C. S. Winslow	C. W. Birchwood	30	4	3620	Birchwood	Diamond	4 3 11	3.085	19.6
10	9	Apperson	J. F. Gunther Co.	N. E. McLain	40	4	4760	Apperson	Diamond	6 1 11	2.93	14.9
11	7	Oldsmobile	Githens Brothers Co.	W. L. Githens	35	4	3680	Holley	G & J.	4 3 29	2.88	19.08
12	22	Premier	Premier Motor Mfg. Co.	H. Hammond	24	4	3480	Schebler	G & J.	5 29	2.6	18.1
13	4	Stevens-Duryea	L. Geyler	L. Geyler	35	6	3395	Stevens-Duryea	Fisk	5 2 17	2.35	16.8
14	8	Kisselkar	Webb Jay Motor Co.	Webb Jay	30-35	4	3690	Schebler	Diamond	6 1	2.3	15.2
15	23	Ford	Ford Motor Co.	T. J. Hay	15	4	1675	Kingston	Firestone	2 3 15	2.28	33.1
16	10	Apperson	J. F. Gunther Co.	R. K. Edwards	40	4	4695	Apperson	Diamond	8 28½	2.23	11.5
17	2	Dragon	Branstetter Motor Co.	F. Wilkins	24	4	3580	Holley	Fisk	6 1 29	2.128	14.6
18	24	Premier	Premier Motor Mfg. Co.	J. Moore	24	4	3340	Schebler	G & J.	6 1 17	2.05	14.8
19	21	Oldsmobile	Joseph E. G. Ryan	B. C. Nlemeyer	35	4	3060	Holley	Michelin	6 13	1.95	15.5
20	13	Maxwell	Maxwell-Briscoe-Chase Co.	C. W. Price	16	2	2710	Maxwell	Goodrich	5 8	1.84	16.5
21	11	Buick	Buick Motor Co.	E. L. Weiant	24	4	3280	Schebler	Internat'l'onal	7 25½	1.77	18.1
22	16	Holsman	T. M. Howell	T. M. Howell	10	2	1385	Universal	Firestone	3 29½	1.67	29.3
23	20	Knox	Knox Automobile Co.	L. B. Garrison	25	4	3360	Standard	Diamond	8 1 18	1.56	11.8
24	17	*Stevens-Duryea	Louis Geyler	C. Ireland	20	4	.....	Stevens-Duryea	Diamond	.....	.....	.....

*Did not finish inside time limit.

CLEVELAND TEST PROVES MUD PLUG



CLEVELAND SEALED BONNET TEST—ON ROAD SKIRTING LAKE ERIE

CLEVELAND, O., Sept. 14—While the entry list of Cleveland's first sealed bonnet endurance test in which the Gaeth was the only one with a perfect score was somewhat disappointing, the contest was a success in every sense of the world, for it demonstrated what a wonderfully reliable and efficient piece of mechanism the modern American motor car has developed into. There have been longer contests of this kind in this country, but never was there a more trying one for cars and for drivers. Several contestants who competed in the Glidden tours of this year and last said that they never experienced three harder or more grueling tests than the 3 days' contest over the miserable roads of Ohio's Western Reserve which were rendered doubly miserable for this occasion by many hours of pouring rain. More than half the contest was pulled off to the accompaniment of a downpour and much of the time it was simply a contest of skill on the part of drivers in keeping straight on the slippery roads around Cleveland.

But it is such a contest that proves the reliability of the car and those who went through it feel well repaid for the results obtained. It is claimed that never before in this country was there such a careful record kept of the individual performances of the cars and seldom were these results worked out to the final conclusions as to the relative efficiency of various cars in matters of gasoline consumption, oil consumption, etc. Only one accident marred Cleveland's endurance contest and this was of a most unusual character. The pilot car, which for 2½ days had scattered confetti in front of the flying cars over

the numerous hills and terrible roads, making a remarkable showing in itself, met with misfortune almost on the home stretch. While rounding a curve going into Monroeville on the afternoon of the last day, the tire on one of the front wheels rolled off, causing the car to swing around into a telegraph pole. The pole was broken in two places and the impact burst the gasoline tank which from some cause or other took fire and immediately the occupants were enveloped in a pillar of flame. Fred J. Baird, general manager of the Homer Commutator Co., was seriously burned about the head and body. J. Lee Cross suffered a dislocated collarbone and was burned about the face. Mert A. Phillips had his face and hands burned, while Burt Adams, who was driving, had his hands burned while attempting to extinguish the flames that were burning the others. The body, tires and running gear of the car were badly burned, although the mechanism was not badly damaged. The contestants who soon came up extinguished the blaze and hurried the injured ones to a nearby house. The accident took much of the spirit out of the contest and for a while it was called off, but was resumed after a delay of about 1½ hours. The route into Cleveland was shortened, however. The White steamer press car carried the injured to a Lake Shore train and they arrived in Cleveland in the evening.

The last day's contest was not so strenuous as the first two, but there were long stretches of muddy roads where frequently the cars went in almost to their hubs. The course was from Cleveland to Lorain to Huron to Sandusky, then south to Clyde

and returning by way of Bellvue, Monroeville, Norwalk and Elyria, a distance of about 150 miles. The 60 miles from Cleveland to Sandusky along the shore of Lake Erie formed the only pleasant portion of the entire contest. The road skirted the high bank along the lake shore and the lake was in view almost the entire distance to Sandusky.

The contest proved a sweeping victory for the products of Paul Gaeth, the Cleveland manufacturer. His four-cylinder touring car was the only one to go through the contest with a perfect score, while his single-cylinder commercial vehicle, the only contestant in this class, went over 450 miles of bad roads during the 3 days without any difficulty, a remarkable performance for a car of this type in view of the speed required—about 15 miles an hour—and the terrible condition of the roads. But according to the technical experts who had charge of this feature of the contest Gaeth was blessed with remarkably good fortune, for he reached the garage on the last evening with scarcely any water in his cooling system and with one cylinder out of commission the greater portion of the last day.

On the other hand, the four-cylinder Buick and the Mora traveled in hard luck, both of them losing perfect scores through no mechanical defects. The Mora met with troubles in the way of punctures and a bent axle and was assessed 25 points the first day because a tire chain broke and caught in the driving mechanism, stalling the engine for a minute, but the bonnet of the sturdy little machine was not opened and the three sets of seals for the New York, the Chicago and the Cleveland contests still remain intact. The Buick four-cylinder lost 40 points through the carelessness of a driver at the garage who, for some unaccountable reason, broke one of the radiator tubes while filling with water. The committee allowed him to make a temporary repair by plugging the radiator but the plug gave out on the third day and it was necessary to take on water. The following is the summary of the penalization for 3 days and the complete score:

SEPTEMBER 10

Gaeth—No penalty
Mora—25 points for stalling engines
Buick 2-cylinder—443 points for being late at last control, 5 points repairing mud guard, 50 points putting on new chain, 43.5 points for being late at first control

Cartercar—100 points for replacing front axle, 35 points for taking on water
Mora—No penalty

FIRST DAY OF THE CLEVELAND TEST—DISTANCE, 138 MILES

Make of car	Buick 17	Carter 22	Carter 21	Mora 16	Buick 18	Gaeth 15
Total weight	2633	1665	2910	3103	3070	3885
Total gasoline	11.38	11.19	14.16	10.89	11.88	15.54
Gasoline per 2000 lbs.	9.17	8.32	9.75	7.02	7.75	7.98
Gas per ton 100 miles	6.65	6.03	7.06	5.08	5.62	5.79
Total water	.37	3.5	.75	1.	2.7	1.2
Water per ton	.284	2.6	.516	.644	1.76	.618
Water per ton per 100 miles	.6	1.88	.374	.467	1.27	.447
Total oil	.692	.495	.475	.165	.896	.385
Oil per 2000 lbs.	.532	.367	.326	.106	.584	.198
Oil per ton, 100 miles	.376	.266	.296	.076	.423	.143
Miles per ton per gallon	15.2	16.7	14.2	19.8	17.8	17.2

SECOND DAY'S RUN OF CONTEST

Make of car	Buick 33	Carter 22
Total weight	2600	2845
Total gasoline	12.08	11.88
Gasoline per 2000 pounds	9.30	8.34
Gasoline per ton 100 miles	5.97	5.35
Total water	1.00	7.98
Water per 2000 pounds	.77	Broken-
Water per ton, 100 miles	.494	100
Total oil	.766	.422
Oil per 2000 pounds	.590	.422
Oil per ton 100 miles	.38	.37
Miles per ton per gallon	16.8	18.6

Buick—No penalty
Gaeth—No penalty

SEPTEMBER 11

Buick 2-cylinder—No penalty
Cartercar—20 points for being late at last control, 50 points for breaking seal, 55 points for replacing spark

SEPTEMBER 12

Buick 2-cylinder—No penalty computed
Cartercar—25 points for replacing batteries, 50 points for taking on water
Cartercar—24 points for being late at first control, 270 points for soldering gasoline pipe
Mora—No penalty
Buick—40 points for taking on water
Gaeth—No penalty
Buick 4-cylinder—No penalty
Cartercar—107 points for being late at last control, 50 points breaking seal, 405 points repairing broken gasoline pipe
Cartercar—120 points for repairing front axle

TOTAL PENALIZATIONS

Car	Driver	Penalization
Gaeth, Paul Gaeth.....	None	
Mora, J. W. David.....	25 points	
Buick, H. J. Trumble.....	40 points	
Cartercar, B. J. Carter.....	549 points	
Cartercar, A. W. Hall.....	771 points	
Jackson, C. D. Paxson.....	Abandoned	
Jackson, Robert Burman.....	Abandoned	
Buick, C. W. Bettes.....	Not computed	

The technical details figured out by the committee composed of Professor L. J. Buschman, of Case School of Applied Science; Walter C. Baker, of the American Ball Bearing Co., and George H. Bowler, chairman of the contest, form an interesting and valuable compilation, one which will doubtless be used as a basis for similar contests.

LONG ISLAND RACE OFF

New York, Sept. 17—The efforts of T. Francis Moore, formerly press agent of Wyckoff, Church & Partridge, and Harry Burchell, sporting editor of the New York Times, in the name of the Metropolitan Automobile Association to promote a stock car race on Long Island the week before the opening of show fortnight in this city in October, have come to naught. The Nassau county supervisors at their meeting yesterday advised Mr. Moore that it would be useless to file his application for the use of the roads, as the permission would not be forthcoming. Moore and Burchell had been given considerable encouragement from all parties interested. There is no doubt that a majority of the Nassau county citizens favored a sanction for the race, for previous contests had proved much money would be brought to the county. A considerable number of makers and dealers were anxious for the race for the chance it would offer to demonstrate their 1908 product and the effect it would have in stirring up business. Several of the supervisors gave encouragement that the necessary permission would be granted



GAETH, ONLY CAR WITH CLEAN SCORE IN CLEVELAND SEALED BONNET TEST

and even went so far as to accompany Moore and Burchell in a tour of search for an available 15-mile course. The attitude the A. A. A., as stated by some of its racing board leaders, was likely to assume in the event of permission being secured to use the roads, was to ignore the race entirely. The A. A. A. had placed itself on record as opposed to any road race on Long Island without military protection. On the other hand, the Nassau county supervisors had a legal right to give the use of the road to the Metropolitan association. In his preliminary talks with some of the supervisors it had been intimated to Mr. Moore that his association would be required to deposit \$10,000 with the county as a guarantee that it would pay the cost of the police and other expenses and show besides that it had capital to promote the race. Moore declares a friend of his arranged to furnish backing for the race to the extent of \$25,000 and that a representative of a surety company was on hand to convince the supervisors that a bond would be forthcoming. Previous to the meeting A. R. Pardington, general manager of the Long Island Motor Parkway Co., had a talk with the supervisors. Mr. Pardington says he was sent for by the supervisors. Mr. Moore maintains that he went voluntarily on behalf of the parkway people, who, he says, naturally would not favor a race in the open road, and attributes the change of mind of the supervisors to this opposition. Moore says he was approached by two men from "an influential citizen," stating that the latter's influence in favor of the race could be secured were he permitted to give the trophy and name the

promoting body and the officials in charge. Moore insists that he cornered the emissaries and is convinced they came from William K. Vanderbilt, jr. He refused to consent that the race be run other than by the Metropolitan Automobile Association or by any officials not selected for the race by Robert Lee Morrell.

BIG MEET PROMISED

New York, Sept. 17—The New York Automobile Trade Association is to coöperate with the motordrome club in the promotion of the meet at Morris park on September 27 and 28. This will make E. V. Stratton, its general manager, practically at the head of the management, with headquarters at 29 West Forty-second street. In addition to the 24-hour race on that day, arrangements have been made for a race assimilating road conditions. Neither of the turns of the track will be used, but instead the course will take the contestants over newly made roads across the fields with plenty of turns, stretches of sand and a steep hill. This contest will be at 50 miles and will be run on Saturday afternoon. On Friday there will be a 25-mile track race and open 5-mile handicap; a race for Ford cars, with an opportunity for every maker to have a special race with at least seven starters; match events and record trials; a New York taximeter cab race, each cab to carry two women; a motor cycle race, and the 24-hour race, which will start at 8 o'clock Friday night. On Saturday there also will be a dealer's selling handicap; a flexibility contest; match races and record trials; gymkhana games, including polo and motor car balancing.

IN CLEVELAND—DISTANCE 152 MILES

Carter 2	Mora 16	Buick 18	Gaeth 15
2857	3055	3270	3480
16.45	15.05	15.70	14.85
11.61	9.86	9.63	7.66
7.38	6.83	6.19	4.91
5.2	1.10	2.30	1.67
8.64	.723	1.71	.86
2.34	.46	1.1	.55
1.115	.211	.924	.428
.780	.138	.566	.221
.50	.089	.364	.142
13.6	15.8	6.2	20.4

THIRD DAY'S RESULTS AT CLEVELAND—DISTANCE 156 MILES

Make of car	Buick 2 1/2 HP	Carter 2, 22	Carter 2, 21	Mora 4, 16	Buick 4, 18	Gaeth 4, 15
Total weight	2695	2785	2998	3105	3435	4160
Total gasoline	12.1	10.6	14.7	12.5	12.1	25
Gas per 2000 lbs., 152 miles	9.0	7.61	9.82	8.05	7.05	12.05
Gas per ton per 100 miles	5.92	5.01	6.47	5.2	4.64	7.94
Total water	1.5	6.7	3.5	1.7	.....	7.3
Water per ton	1.11	4.82	3.34	1.09	.....	3.51
Water per ton, 100 miles .....	.73	3.17	1.53	.71	2.31	2.31
Total oil .....	.58	.57	1.463	.105	.66	3.0
Oil per ton, 152 miles .....	.43	.41	.99	.07	.38	.15
Oil per ton, 100 miles .....	.28	.27	.64	.044	.25	.096
Miles per ton per gallon	16.62	19.90	15.43	19.90	21.40	12.62

BRESCIA MEETING A BRILLIANT SUCCESS



NOVEL WAY OF SIGNALING POSITIONS TO CONTESTANTS



NATURE'S OWN GRAND STAND AT BRESCIA RACE

BRÉSCIA, Italy, Sept. 2—The success of the Brescia circuit and the brilliant victories achieved by the Italians on this occasion only confirm the opinion of those who foresee a great future for the Italian industry. The Brescia circuit of course brought the motor world here. French and Italian cars predominated, but there were cars of other nations present—German, British, Belgian and Swiss. It was, however, recognized that the fight was between the French and Italians. On the Italian side it is noted that no Fiats were entered, the makers of that car being content, no doubt, to rest on their foreign successes and allow other Italian makers to offer battle to the invaders. French genius was represented by Darracq and Rochet-Schneider in the Florio cup, raced on the lines of the German emperor's cup, while Benz was the German favorite and the Wolsit came from the British Wolseley Co. The majority of the cars were Italian.

There were forty-two entries in the emperor's cup rules race yesterday. The S. P. A. car led off and was followed at 30-second intervals by Darracq, Wolsit, Rochet-Schneider, Isotta-Fraschini, Itala, Bianchi, Gaggenau, Rapid, Junior, Eisenach, Benz and so on, each of the above being represented by two and three cars in the race. The Darracq of Demogeot was the first one round, but the fastest lap was made by Minoia in an Isotta-Fraschini, who was showing a clean pair of heels to all. He took 34 minutes 4 seconds on the first lap, 30 seconds faster than Trucco, also driving a car of the same make. The Darracq, the first French car, was 2 minutes behind the Italian racers. The second lap was a repetition of the preceding one, for Minoia and his Isotta car were the fastest and did the lap in 33 minutes 34 seconds—the Cagno Itala being 30 seconds slower and a Darracq a whole minute behind the Italian champion. The third turn showed still better times, for Minoia was back to the post in 33 minutes 22 seconds, which time was only beaten once in the race, and that by himself on

the sixth lap, when he made the excellent time of 33 minutes 16 seconds. The fourth, fifth and sixth laps saw no changes in position, the Italians always increasing their lead. The Darracq and Rochet-Schneider were doing excellent work, however, and still had a chance. Minoia, however, had a clear lead of 7 minutes over the Benz car, driven by Hemery, who was his next rival and going very strong. The Benz car of Hanriot also was running well and Trucco in the other Isotta car was not far from either of these. On the seventh lap the French cars began to lag somewhat and the Benz cars had the edge on them. The Rochet-Schneiders of Viton and Thieulen were making a good try for second place. Minoia and Trucco both slowed down on the seventh and eighth laps, each taking 38 minutes. Such was the lead, however, obtained by these cars that nothing could beat them and the final positions at the end of the race were

announced as follows:

Driver and car	H.	M.	S.
Minoia, Isotta-Fraschini	4	39	55
Hemery, Benz	4	49	49
Hanriot, Benz	4	57	47
Viton, Rochet-Schneider	5	06	55
Trucco, Isotta-Fraschini	5	05	56
Thieulen, Rochet-Schneider	5	07	25
Demogeot, Darracq	5	10	45
Airoldi, Darracq	5	15	12

Bianchi, Benz, Gaggenau, Junior, Wolsit, Rapid followed the above in such good times that the last racer had finished within almost an hour of the winner. Fourteen out of thirty-two starters finished and the lap was 38 miles long.

The Brescia race, contested under the rules of the French grand prix, was raced today over the same circuit as the race in which the kaiserpreis rules were used. It would have been a more brilliant success if the weather had been brighter. However, rain did not fall over the whole of the district, but the cars were obliged to stop to put on chains and in consequence times suffered because some of the roads became very slippery. Fourteen cars started, the Lorraine-Dietrich and Bayard and Darracq cars representing France, while the Itala, S. P. A. and Diatto-

Clement were the Italian champions. Seven French and as many Italian cars actually started. The times of the laps were even better than those made the preceding day on the same circuit and Cagno began to show great pace on the second, third and fourth laps, making them, respectively, in 31 minutes 56 seconds, 31 minutes 31 seconds and 33 minutes 38 seconds. He had been, however, long on the first lap and only stood fourth in the general rating. The Lorraine-Dietrich and Bayard, in fact, were in the front. On the sixth lap, however, it was seen that Cagno had climbed to top place, which he did not leave until victory was assured. Only six cars finished the race, as follows:

Driver and car	H.	M.	S.	Time.
Cagno, Itala	4	37	36	
Demogeot, Lorraine-Dietrich	4	40	43	
Rouquier, Lorraine-Dietrich	4	45	31	
Gabriel, Lorraine-Dietrich	4	50	45	
Alezzy, Bayard	4	53	58	
Garcet,	4	49	22	

Duray had bad luck and after leading for two laps disappeared. The prize won by Cagno is worth \$3,000 and is a reproduction of an ancient work of art, lost for many centuries and rediscovered in 1828. It represents winged victory.

TALKS OF MOTOR FUEL

Hartford, Conn., Sept. 13—The test committee of the mechanical branch of the Association of Licensed Automobile Manufacturers met Thursday. At the morning session Irving Buck, the chemical expert of the United States Alcohol Co., who has been conducting a series of tests showing the comparison of alcohol and gasoline, delivered a lecture on the subject. Action was taken by the committee to assist in a more exhaustive study of alcohol as a fuel, and a specially equipped power plant is to be installed. The first experiments, however, will be conducted with the various carburetors which are in use and which will be attached to a Thomas Forty motor, now being used for the engine tests at the Hartford laboratory. It is the idea of the engineers to attempt to adapt the

use of alcohol to the present-day motor before attempting further experiments along this line with specially built motors. At the conclusion of the chemical and efficiency tests on the demounted motor special vaporizers will be used and practical road tests given. The experiments which so far have been conducted resulted in a reversal of opinions as to the starting properties of alcohol. The predetermined theory that alcohol could not start without subjecting the vaporizers to a heat treatment has been found erroneous. It has been shown, it is claimed, that if the proper amount of alcohol and water is used the motor can be turned over with the same ease as an ordinary gasoline fuel engine. The engineers of the branch have been endeavoring through experiments which they have been making to obtain the maximum results in motor construction toward a reduction of the amount of fuel consumed. Some interesting efficiency tests were conducted Thursday, showing brake tests, heat development and fuel consumption under various piston speeds. Part of the afternoon session was devoted to tires, an all-absorbing subject both to manufacturer and user. It has been conceded that practically all the existing evils remaining in the modern constructed motor car is the tire. The engineers have long been co-operating with the tire makers to remedy this trouble.

MILWAUKEE IN LINE

Milwaukee, Wis., Sept. 16—It looks now as if the meet which will be held at the state fair track Friday and Saturday of this week will be the largest motor affair yet attempted in Milwaukee this season. The Milwaukee Automobile Trade Association is engineering the meet and it has arranged an attractive card. There will be seven events run, with a 24-hour affair as the feature. Preceding the long grind will be a 3-mile handicap for runabouts listing at \$1,000 and under, a 5-mile handicap for cars listing at \$2,000 and under and a 10-mile handicap for cars listing at \$2,000 and over. Following the finish of the 24 on Saturday will be a 5-mile for cars \$2,000 and under, a 10-mile handicap free-for-all and an obstacle race open to cars driven by owners of the machines.

GOING UP COG ROAD

Denver, Colo., Sept. 15—C. B. Harris, traveling inspector for the Franklin factory, has been in this territory for some weeks past looking over the cars of customers. While at Colorado Springs this week he arranged with General Manager Sells, of the Pike's peak cog road, to make a trip to the top of the peak over the ties of the road in a Franklin. This will be the first time such a thing has been attempted. The grade, from Manitou, 6,000 feet altitude, to the top, 14,000 feet, rises from 4 per cent to 25 per cent. No date has as yet been fixed for the ascent.

REPORT ON U. S. ROADS

Federal Statistics Show There Are More Than 2,151,570 Miles of Public Highways

Washington, D. C., Sept. 14—While it is known in a general way that some parts of the country have made greater progress than others in the improvement of the public roads and that enormous sums are expended annually on road construction and repairs, there has been no information compiled up to the present time showing just what has been accomplished and how much is expended annually for this purpose in the United States. A few of the states have published reports giving some information upon these subjects, but only in rare cases have they shown the mileage of improved roads or the road expenditures by local authorities.

The federal office of public roads has just completed the collection and compilation of information from every county in the United States in regard to the mileage of improved and unimproved country roads in the year 1904, together with other pertinent information as to expenditures, bond issues, state-aid laws, etc. The statistics as compiled show that in 1904 there were 2,151,570 miles of public road in the United States. Of this mileage 108,232.9 miles were surfaced with gravel, 38,621.7 miles with stone, and 6,809.7 miles with special materials, such as shells, sand-clay, oil and brick, making in all 153,664.3 miles of improved road. From this it follows that 7.14 per cent of all the roads in this country have been improved. By comparing the total road mileage with the area of all the states and territories, it appears that there was 0.73 of a mile of road per square mile of territory. A comparison of road mileage with population shows that there was 1 mile of road to every thirty-five inhabitants, and 1 mile of improved road to every 492 inhabitants. Only four states have more than 100,000 miles of road. Texas stands first with 121,409 miles; Missouri second with 108,133; Iowa third with 102,448, and Kansas fourth with 101,196. It is interesting to observe that for every mile of railroad the country has about 10 miles of wagon roads.

Of the 153,662 miles of improved roads in the United States, Indiana has the largest mileage—that is, 23,877 miles. Ohio occupies the second place with 23,460 miles. Wisconsin is third with 10,633, Kentucky fourth with 9,486 miles. Illinois, Massachusetts and Michigan have over 7,000 miles each.

In about two-thirds of the states gravel has been the principal surfacing material used in improving the roads. The largest mileage of gravel roads is found in Indiana, Ohio, Wisconsin, Massachusetts, Michigan, Minnesota, Illinois and California. In eight states the mileage of macadam roads exceeds that of gravel, and in

a few others it is nearly equal. Kentucky has the largest mileage of road surfaced with stone—over 8,000 miles—and Ohio is second with a little over 7,000. Other states with large mileage of this class are Indiana, New York, Pennsylvania, Texas and New Jersey.

The District of Columbia occupies the first place in its percentage of roads improved, having 68.58 per cent improved. Massachusetts has the highest percentage of any state—that is, 45.89 per cent; Rhode Island comes next with 43.26 per cent improved highways.

The total expenditures for public roads during 1904, by states, counties, townships and districts, from property and poll taxes, bond issues and state-aid funds, together with the valuation of the labor expended under the statute-labor law, amounted to \$79,771,417.87, which includes the sums expended on bridges, as a bridge is usually considered a part of a road, and taxes are, in most cases, levied and assessed for both at the same time. The amount which was expended on public roads in 1904 would represent the interest on \$1,994,285,446.25, if computed on a basis of 4 per cent. When it is considered that the expenditure which this vast sum represents was for the construction and maintenance of 2,151,570 miles of public highways, enough roads to reach around the earth at the equator eighty-six times, it is somewhat surprising that the expenditure was not greater.

PLANS SHOW RELIABILITY

Chicago, Sept. 17—The Chicago Motor Club, proud of its season's record, intends keeping up the fast pace during the winter. In addition to the speedometer test which will be held the week of the show, here, plans are being discussed for an 800-mile reliability run which will be a curtain-raiser for the show proper. Although no definite action has as yet been taken, the talk is for a 200-mile-a-day affair, lasting 3½ days and finishing the afternoon the show opens. Everything will be sealed and the contest made as strenuous as possible. It is figured to send the cars to Milwaukee and back the first day, to South Bend and return the second day, to Rockford, Ill., and back the third day and on the finish loop around by way of Joliet, Elgin and Aurora. General Manager Miles will be asked to donate the cup and also to place the winning car on exhibition in the Coliseum during the week of the show. It is figured such a contest would furnish the best kind of gilt-edged advertising for the winner and it would seem that it ought to attract from fifty to 100 entries, as every maker exhibiting will have at least one demonstrator here which he could send on for the reliability run, as it comes the week before the show. The Chicago Motor Club, if it concludes to take up the idea, which seems more than probable, will carry it through with all the carefulness for detail which has marked its efforts so far.

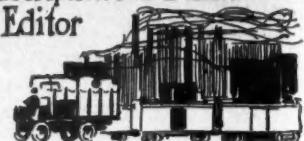
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UNCLE SAM'S ROADS



NOTHING really startling comes with the federal government's reports on the roads of the country, which has just been made public. If it were a private concern making such a report the private concern would feel so ashamed of itself as to wish it had never made public such figures as stand out as an awful indictment. That this great and prosperous and enlightened land of the free has only 7 per cent of all its 2,151,570 miles of public highway improved ought to make the president, the members of congress and every government official feel deeply ashamed. Every 492 inhabitants of this country can boast of a full mile of improved roadway—and in this case "improved" means all the old worn-out roads that are almost beyond repair and some totally unfit to be graced by the term improved. And of all the 153,664 miles of "improved" highways, for how much is the federal government responsible? Millions of dollars may go toward subsidizing railroad and shipping interests, millions may be spent upon practically unused harbors and antiquated canals, but the great American people—the farmer, the merchant—yes, the motorist—who use the highways every day and every hour can get along with its traveling as best it can. Shame, Uncle Sam, shame!

CHANGE BADLY NEEDED



MOTORING organizations are prone to procrastinate and in justification thereof offer excuses that at the time they are made seem reasonable enough to compel one to accept them and to expect something in the near future. Shows, annual tours, big road races, vacations and other things appear with precise regularity to distract the attention of the officers and committees of both local and national bodies from the plans laid with the good intention of accomplishing something along the lines of good road work, legal matters and similar things that are of prime importance to motorists in particular and the public in general. Within the past couple of years there has been a vast amount of work laid out and a very small amount performed—some one of the stock excuses is at all times ready for offering. The annual tour of the American Automobile Association ended a couple of months ago; the first show is a month or more away; this makes practically 4 months in which something might have been accomplished. What is

the American Automobile Association doing at this time for the benefit of motorists? The American Motor League has been "perfecting its organization" for the past half-dozen years, but beyond this and some minor accomplishments, what has it done? A few of the state organizations have made some headway and a few energetic clubs have kept before the public. All of the work, however, has been of the desultory sort and shooting in the air seldom sees the bullets reaching the bull's-eye—all of which suggests again that a little less talk and a little more real accomplishment might be more satisfactory to all motorists.

HAS TRACK RACING PAID?



WO years ago motor car track racing in this country was at its height; since that time it has been on the decline, although there has been a little spurt within the past few weeks. The talent that has been seen this season has been of the local order, none of the stars from abroad having taken part in any of the contests and few of the home talent being rated out of the ordinary. Chicago, Denver, Detroit, Minneapolis, Pittsburg, New York, Philadelphia and one or two other places have supplied the excitement. There has been an absence of the Oldfields and the Jays of previous years, although there has been a sufficient supply of fairly good talent in the line of drivers. There have been few especially built racing cars, but numbers of high-powered roadsters, which perhaps compare favorably with many of the racing cars that have been seen. Outside of a number of 24-hour contests the racing has been nothing that might call for lengthy descriptions from writers and altogether lacking in interest. Perhaps mile tracks have seen the limit of speed and that this accounts for the fact that there have been few records broken. As before stated, there has not been a meet that really generated any intense excitement over the contests as contests; but excitement was created, nevertheless, even if it did require the sacrifice of several lives to produce it. Competent race drivers have come to the conclusion that, considering the elements of danger and remuneration, the motor car racing game on tracks that are generally

used is by no means enticing and have as a result of this conclusion refrained from taking part in such contests as have been held. The racing enthusiasts have some hope that the Morris park track may prove competent to be called a motor car race track, that the east will support it and that it will at some time be able to interest better talent than has been seen on the tracks of the country this year. While there has been some more or less interest in the local affairs, there has not been enough of the real interest manifested to warrant a continuance of the motor car racing game on mile tracks and more particularly so if the cost is to include several lives each season. If motor car track racing is to continue—and it bids fair to do so to some extent—special tracks must be built for the purpose. In addition, the racing board of the A. A. A. should scrutinize programs, entry lists and drivers' names before sanction is granted. The A. A. A. ought to be responsible to some extent for the safety of the contestants and the public if it is to govern racing.

WHAT SHOWS WILL SHOW



PEOPLE who anticipate seeing anything really startling at the forthcoming shows will doubtless be somewhat disappointed—or else Motor Age will find itself somewhat mistaken. It is conceded that many of the leading manufacturers of motor cars will exhibit six-cylinder creations, but beyond this there will be little that will cause wonderment. The four-cylinder car will naturally find itself still at the top, but it will have a tough competitor in the six, although beyond the matter of the number of cylinders there will be little if any important change in the matter of construction. It would be only natural to expect the 1908 cars to appear more refined than were those produced in 1907—and the next year's cars will be better in point of reliability, in material and in looks. In one sense there will be a dropping in price, in that the makers will give more car and better material and better design and better wearing qualities for the same price. There will be big cars and little cars and there will be the usual variety in the matter of the number of cylinders, but it will be found the tendency is toward four and six-cylinder motors rather than toward the one and two. There will be nothing very remarkable in the matter of mechanics that will appear on the 1908 cars. They will be like the 1907 cars, only more so, as it has been expressed.





WISCONSIN farmers who attended the state fair were convinced that the motor car is the real thing and that the horse—pride and pet of the ruralites for generations—is not so much after all. When it came to dragging the race track to put it in shape for the trotting races, horses attempted the job after each heat, but were so slow that an enterprising Rambler agent set a car to work and simply romped around the track after each heat and so fast as to make the farmers' heads swim. One may well imagine the expressions of astonishment, and best of all words of delight that came from the farmers' mouths after this spectacle.

—♦—
ROAD contests tending to show the reliability of the modern motor car are becoming popular. It is not essential to show that motor cars will run, for that is conceded, but so long as the contests are made more difficult as time passes and the cars perform in a creditable manner the sooner are the doubters converted. It must not be thought there are no doubters simply because there are countless numbers of motorists who are whizzing along the highways every hour of the day—there are millions yet to be converted and these reliability, sealed bonnet, economy and other contests tend to convert the doubters in big numbers. Chicago has had a most

THE WEEK IN BRIEF



Twenty-four cars compete in second annual economy run of Chicago Motor Club to Valparaiso and return, winning car being 28-30-horsepower Pierce-Arrow, driven by Paul Hoffman, who was winner of similar contest last year.

Feature of race meet at Philadelphia is 100-mile Keystone state championship, which is won by boy, Joseph Parkin, Jr., in a Packard, Parkin, Sr., acting as mechanic.

Three days' sealed bonnet test at Cleveland proves a battle with the elements; only car to finish with perfect score is the Gaeth; commercial wagon makes good run.

Hartford's hill-climb proves an attractive event, with speed honors going to Pope-Hartford and air-coolers making a brave showing.

Efforts to promote stock car race on Long Island at show time come to naught, supervisors refusing to take up matter.

Federal officials issue interesting report showing number of miles of public roads in the United States.

Details of running of Florio cup races at Brescia, Italy, show affair to have been a brilliant success.

Test committee of mechanical branch of A. L. A. M. making experiments with alcohol.

Darracq wins 50-mile race on last day of meet at Pittsburg in remarkably fast time.

New York making preparations for second meet at Morris Park next week.

Readville meet proves to be tame one, with hardly any exciting races.

successful season of road demonstrating, Cleveland has been doing the showing in a 3-day test, there was the Gildden tour and there have been other contests that not only were of immense benefit to the trade at large, but were the means of selling some particular car because of that particular car's performance in some contest. It may be somewhat expensive, but in the end it will be found to have been about as good a business getter as could be devised.

—♦—
TWENTY-FOUR-HOUR racing has the call at the present time and it is evident from the various programs announced that no high-class meet is complete without an endurance test of this sort. One point may be brought out in favor of these long grinds, and that is, so far they seem to be harmless as compared with the shorter distance events, for there have been few accidents connected with them, although as much cannot be said regarding the scandal department.

—♦—
AMERICANS now see Europe by touring in motor cars. All real Americans travel this way—that is, anybody who is somebody. It is estimated that something like 40,000 Americans whizzed over the fine roads of the British Isles and the continent in motor cars—some belonging to the tourists and others hired for the occasion—and that they dropped fully \$400,000 a day in this manner. They toured all parts and ran night and day, evidently desiring to get all they could for the money. They have realized that of all ways the motor car route is the one to take in order to get even a decent glimpse of the old country. And this \$400,000 a day might be spent at home if America had simply fair roads—another lesson for Uncle Sam.

—♦—
ALCOHOL is not to be left to peter out as an available fuel for motor cars and internal combustion motors generally if the engineers' branch of the Association of Licensed Automobile Manufacturers can find any way to use it and a way to make its use compare favorably with gasoline so far as the matter of economy is concerned. The engineers have been experimenting, have made some important discoveries and hope by further work to be able to show how alcohol can be made a commercially successful fuel. The alarm that has been spread from time to time over the probable shortage of gasoline and the consequent rise in the price has not, so far, been well founded, for while the demand certainly has increased, the price today is less than it has been for a year.

AN EXAMPLE of the hold motoring has on its followers was furnished in the 100-mile race at Philadelphia last week, in which an enthusiastic father acted as mechanic for his boy, who drove the winning car, a Packard. The father was largely instrumental in bringing the boy through by making needed adjustments during the race and acting up to the position in every respect. While Motor Age does not fancy track racing, it cannot help but commend the spirit shown by the father. As long as such enthusiasts are to be found motoring will never lack for followers in this country.

—♦—
IT HAS been said reliability runs and sealed bonnet tests have outlived their usefulness in demonstrating to the public the utility of the motor car, but the experiences of the contestants in the recent Cleveland affair would seem to refute such statements. Fighting mud for 3 days, the eight cars stood the test in an admirable manner, and while only one of them went through with a perfect score all the machines ably demonstrated to the world at large that the elements are not to be feared by the motor car. This, following the test of the New York Motor Club last winter, in which the contestants battled with the snow in a strenuous journey, only goes to prove the claims of the manufacturers as to motor car reliability.

COMING MOTOR EVENTS



Milwaukee Meet—Milwaukee Automobile Trade Association's race meet, with 24-hour race as feature, September 20-21.

St. Louis Reliability—Reliability run of St. Louis Automobile Club for private owners, September 21.

Morris Park Events—Second meet of Morris Park Motordrome Club at Morris Park, September 27-28.

Racing in Chicago—One-day meet of Chicago Automobile Club at Harlem track, September 28.

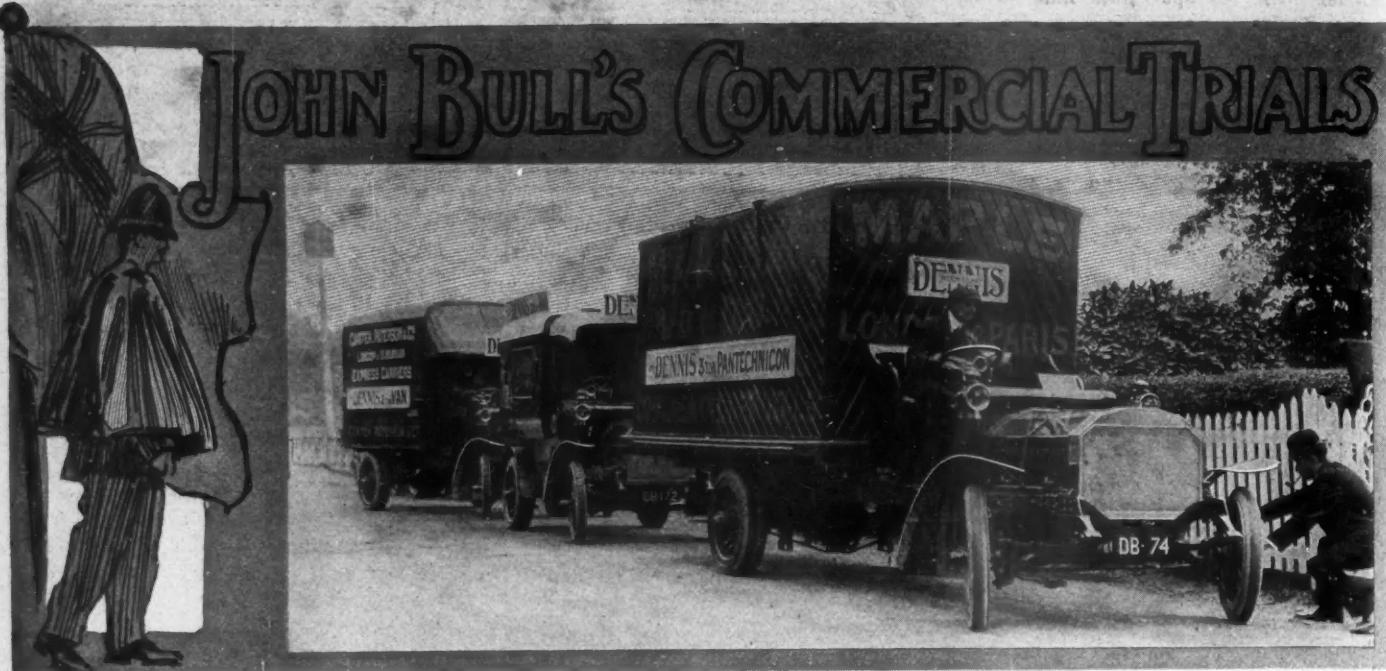
A. C. C. Show—Automobile Club of America's annual show at Grand Central palace, New York, week of October 24-31.

New York Show—A. L. A. M. show, Madison Square garden, November 2-9, M. L. Downs, 7 East Forty-second street, New York.

Chicago Shows—Eighth annual Chicago show, Coliseum, and first commercial vehicle show at Seventh Regiment armory, both November 30 to December 7. S. A. Miles, manager, 7 East Forty-second street, New York.

Chicago Commercial Test—First annual test of commercial cars, Chicago Motor Club, November 30 to December 7.

Importers' Show—Importers' Automobile Salon exhibit of pleasure and commercial vehicles in Madison Square garden, New York, December 28-January 4.



THE DENNIS WORM DRIVE VAN WITH ITS ENORMOUS CARRYING SPACE

ENGLAND is witnessing the most gigantic test of commercial vehicles that has taken place in any country as yet. Under the regulations of the Royal Automobile Club the tests began on September 9 and will continue until October 12, during which time the sixty competing vehicles will have been called upon to make twenty-two separate runs and to spend 8 days in exhibitions.

The contestants are divided into seven classes, as follows: A, vehicles for a load of 10 hundredweight; B, vehicles for loads from 10 to 20 hundredweight; C, vehicles carrying from 20 to 30 hundredweight; D, vehicles transporting from 30 to 40 hundredweight; E, trucks for loads from 40 to 60 hundredweight; F, trucks for 60 to 100 hundredweight loads, and H, steam trailers

for loads up to 120 hundredweight. The daily trips range from 30 to 70 miles, the former distance for those wagons carrying medium loads and the latter for the heavy steam wagons with their trailers. The route is so arranged that, irrespective of the distance traveled each day by the different contestants, they all stay over night at a common parking space.

The route is a circuitous one, circling from London west to Bristol, thence north to Liverpool, Manchester and Leeds, embracing the big manufacturing districts, and finally south along the east side to London. By this circuit the vehicles are taken through the big manufacturing territories, in which it is the aim of the Royal Automobile Club to interest the prospective users. Nights stops are made

at the following places: Reading, Hungerford, Chippenham, Bristol, Gloucester, Worcester, Birmingham, Stafford, Newcastle-on-Tyne, Liverpool, Manchester, Huddersfield, Leeds, Sheffield, Mansfield, Nottingham, Leicester, Northampton, Bedford, Baldoke, Dalston and Chiswick. This list shows the universal nature of the tests, as the names enumerated embrace the manufacturing Meccas of the empire and mean an introduction of the vehicles to practically every line of manufacture in the island. The eight exhibitions are being held at Bristol, Birmingham, Liverpool, Manchester, Leeds, Sheffield, Nottingham and Bedford.

Of the entry list of sixty the division among the seven classes follows: A, 10 hundredweight, six entries; B, 20 hundredweight, six entries; C, 30 hundredweight, seven entries; D, 40 hundredweight, eight entries; E, 60 hundredweight, twenty entries; F, 100 hundredweight, ten entries, and H, 120 hundredweight, three entries. Of these entries eleven are steam machines, several of which are Darracq-Serpollet wagons with semi-flash generators, and the others are heavily-built English steam tractors designed on the traction engine plan. One entry is a combination gasoline and electric truck with a gasoline motor driving an electric generator and this providing electric current to electric motors coupled to the drive wheels. Incidentally this is the first vehicle of this kind to enter in one of the big European tests. A rapid summary of the contesting vehicles shows forty-seven to be of English manufacture and thirteen of foreign construction. In the list of foreign builders are such names as Darracq-Serpollet, Fiat, Turgan, Unic, de Dion and Darracq gasoline machines. The English makers include such familiar names as Milnes-



A COMPETING WOLSELEY ENCLOSED VAN FOR MAIL SERVICE

Daimler with the spur gear final drive, Straker-Squire, Lacre, Thames, Halley, Siddeley, Dennis with their worm drive, Thornycroft, Churchill, Hallford, Maudslay, Ryknield, Armstrong, Whitworth, Wolseley - Thomson - Houston, and such steam makers as Savage, St. Pancras, Yorkshire, Foster, Burrell and Tasker.

A glance at the many tendencies in commercial motor car manufacture, as exemplified in these vehicles, reveals some features startling to many American builders. First comes the general use of shaft drive in the smaller-load machines. In class A, the 10 hundredweight machines, five of the six are shaft driven, the remaining one by side chain. In this class all of the contestants have sliding gear transmissions giving three forward variations. Two of the six have single-cylinder motors and the other four two-cylinder engines of the vertical type. In class B, the 20 hundredweight machines, two are shaft driven, three chain driven and one with a spur gear combination between the transmission and the rear axle. The six contestants in this class are all fitted with three-speed and reverse sliding gearsets and three of the vehicles have two cylinder motors and three four-cylinder types. As the bigger classes are reviewed the change to side chain drive and four-cylinder motor becomes more apparent. In class C, for 30 hundredweight cars, three have shaft and four side chain drive. Five of them have three-speed sliding gearsets, the other two being steam cars. Of the five gasoline cars in this class four have four-cylinder motors and one a two-cylinder motor. The two Darracq-Serpelot steamers have two-cylinder engines. In class D, the 40 hundredweight machines, of the eight contestants five have side chain drive, one the Dennis shaft drive with worm transference to the differential



TURGAN VEHICLE ENTERED IN ENGLISH COMMERCIAL TRIALS

and two spur gear drive. Of these eight five are fitted with selective gearsets giving four forward changes in speed, two have but three forward variations and one is a steam entry. In this class all the entrants but one have four-cylinder motors. Class E, for 60 hundredweight vehicles, with its entry list of twenty, shows fourteen with chain drive, one with shaft and three with spur gear. There is one steam machine in this class. Of the nineteen gasoline vehicles eighteen have four-cylinder motors and one has a 25-horsepower single-cylinder engine. In this class fifteen of the gasoline cars have gearsets giving four forward variations, two gearsets offer but a pair of forward speeds and the other vehicle has an electric transmission. Of the ten entrants in class F,

for 100 hundredweight vehicles, five have chain drive, three spur gear and one shaft. The gasoline vehicles in this class have all four-cylinder motors and five have gearsets giving four forward speeds and one a gearset offering three forward variations. In class H, for 120 hundredweight machines, all vehicles are steam.

In looking over the gasoline cars the observer is impressed with the care shown in the electric equipment. Ten cars are fitted with low-tension ignition, and included in this class are such makes as Fiat, Unic, Milnes-Daimler and Lacre. Of the other vehicles it may be said that all of them have double ignition systems, with double sets of spark plugs. One set takes its current from a high-tension magneto, the other from a large-capacity battery.



A WOLSELEY VAN WITH ENCLOSED SIDE CHAIN DRIVE AND TWIN TIRES

STRONG DRIVE BY A BOY

J. Parkin, Jr. in Packard, Wins 100-Mile Keystone State Championship—Father Is Mechanic

Philadelphia, Pa., Sept. 16—The much-postponed midsummer meet of the Quaker City Motor Club last Saturday afternoon at Point Breeze race track was chiefly remarkable for the sensational win of the 100-mile Keystone state championship for stock cars by Joseph Parkin, Jr., driving his own Packard Thirty, and beating out such powerful cars as the 60-horsepower Mercedes driven by Eddie McDuffee and the 50-horsepower Frayer-Miller driven by the veteran Dan Webster. Parkin, Jr., is only a boy, but he had the advantage of the experience and advice of Parkin, Sr., who acted as his mechanic and coached him throughout the long grind. And it was not so long, at that, for young Parkin negotiated the century in a trifle over 2 hours—2 hours 22 minutes 26 $\frac{1}{2}$ seconds to be exact.

Seven cars lined up for the start, including, besides the winning Packard and the Mercedes and Frayer-Miller, the runners-up, a 50-horsepower Welch, a 30-horsepower Oldsmobile, a 60-horsepower Thomas and another 30-horsepower Packard.

Before the half-way point was reached Bergdolt withdrew his Welch, which was missing badly, and did not reappear till the Mercedes was completing its sixty-first mile. Just about this time the coolness of the drivers prevented a mix-up between the Owen Packard and the Thomas. The latter had gone into quarters

for some purpose and within a minute came out on the course again, shooting through the infield entrance almost at full speed just as Owen came along close to the inner rail. Owen quickly shut off and threw on his brakes and Coyle, who was driving the Thomas, opened up, and the cars missed connections by a few feet.

All this time McDuffee had been busily engaged amassing a lead, and on the sixty-sixth circuit had the satisfaction of passing the Parkin Packard and was a mile to the good. Along about the seventieth mile it became apparent that there was trouble in the Mercedes camp, for although the car still reeled off miles around 1 minute 12 seconds it was evident something was the matter with its ignition system. One cylinder seemed to be out of commission and a trail of heavy smoke followed the car around the circuit. Parkin, who was going along sweetly just now, began to creep up. At 75 miles he had again passed the Mercedes and was eating into the mile lead of the latter. The eightieth mile-post saw the lead reduced to half a mile. At 85 miles less than the length of

the stretch separated the contenders, and on the eighty-eighth round the crowd cheered like mad when it saw the Mercedes go into camp for repairs. This was the Parkin opportunity, and père et fils improved it to the full, accumulating a lead of 5 miles before the German car reappeared.

Two 25-mile events—one for touring cars, the other for runabouts—preceded the main race. The runabout event was won by Wally Owen in a 30-horsepower Packard in 33 minutes 5 $\frac{1}{2}$ seconds. The Thomas Sixty, driven by Coyle, looked a contender for a while, but had to leave the track twice after holding the lead for 10 miles and was beaten out not only by the winner but by Dan Webster in the Frayer-Miller. Summary of the meet:

25-mile, runabouts—W. Owen, 30-horsepower Packard, won; Dan Webster, 24-horsepower Frayer-Miller, second; W. Coyle, 60-horsepower Thomas, third. Time, 33:05 4-5.

25-mile, touring cars—T. Berger, 30-horsepower Oldsmobile, won; W. Lutton, 30-horsepower Wayne, second. Race stopped at completion of seventh mile. Time, 11:00 3-5.



PARKIN JR. AND SR. IN WINNING PACKARD AT PHILADELPHIA

100-mile, Keystone state championship, for stock cars—Joseph Parkin, Jr., 30-horsepower Packard, won; Edward McDuffee, 60-horsepower Mercedes, second; Dan Webster, 50-horsepower Frayer-Miller, third; William Coyle, 60-horsepower Thomas, fourth; W. Owen, 30-horsepower Packard, fifth. Time, 2:02:26 4-5.

RACE FOR CHARITY'S SAKE

Chicago, Sept. 15—Local motorists assisted in helping the promoters of the county fair at Wheaton, Ill., raise a very respectable sum of money for the Lying-In hospital by taking part in the motor car races 3 days last week. The track, a mile circuit, is fairly speedy and there was a big attendance each day. The motor races were put on at 5 o'clock. On Thursday the Packard was a winner, while Phil Kirk in an Apperson Jack-rabbit did an exhibition 5 miles in 5 minutes 10 seconds. The Apperson and Packard were winners the second day and yesterday the Apperson and Matheson were the ones to carry off the honors. The races are believed to have been of benefit to the trade as the spectators were made up from the society ranks of the city

EAST HAS HILL-CLIMB

Events at Hartford, Promoted by Local Club, Prove Success—Air-Coolers Do Well

Hartford, Conn., Sept. 15—The initial hill climb of the Automobile Club of Hartford was run over the Albany avenue course Saturday afternoon under the most favorable of conditions. The course was 6/10 mile long. Fully 5,000 people thronged the course to witness the events, many of which were thrillers. The honors of the day fell to the Pope-Hartford, much to the satisfaction of the home contingent. It was, however, very hard pressed by the air-cooled Corbin, as well as the Knox and Stevens-Duryea. The work of the air-coolers was one of the principal features of the meet. The committee kept its word and started the events shortly after 2 o'clock, when C. A. Fleming in a Maxwell, in the event for gasoline runabouts costing \$1,000 or less, did the trick in 1 minute 8 $\frac{1}{2}$ seconds, followed shortly after by Frank Kulick in a Ford, who did the course in 1 minute 11 $\frac{1}{2}$ seconds. The next was Russell Tabor, a local boy, driving a Ford, which has been in private service for 6 months, and he equaled the time of Fleming's Maxwell. The tie was not run off and J. D. Maxwell, of the Maxwell-Briscoe company, who was present, suggested that the trophy for the event be turned over to the club for a future race between the same two makes of cars to settle the friendly rivalry.

Event No. 2, for gasoline runabouts selling from \$1,001 to \$2,000, brought out but one starter, A. W. Bell, in a Jackson, who made the run in the slow time of 1 minute 19 $\frac{1}{2}$ seconds. Event No. 3, for touring cars selling for \$1,001 to \$2,000, was won by a Franklin in 1 minute 15 $\frac{1}{2}$ seconds, Bell in the Jackson doing it in 1 minute 17 $\frac{1}{2}$ seconds. While making the turn in this event Fleming in the Maxwell broke a wheel and was out of the running. Event No. 4, for stock runabouts selling from \$2,001 to \$2,500, was a tie between W. W. Lester's Pope-Hartford, piloted by Grady, and a Knox, the time being 1 minute 2 $\frac{1}{2}$ seconds, while a Corbin did it in 1 minute 3 $\frac{1}{2}$ seconds. Event No. 5, for gasoline touring cars selling for \$2,001 to \$2,500, was a lively event in which Mary Ann, an old Pope-Hartford which has already been run 50,000 miles, made the fast time of 1 minute 1 $\frac{1}{2}$ seconds, Grady up. A Corbin did it in 1 minute 7 $\frac{1}{2}$ seconds.

Event No. 10, a free-for-all for gasoline stock cars, was a thriller and nearly resulted fatally. A stripped Knox came rumbling around the turn and skidded into the crowd, and that no one was damaged was a miracle. The event went

to Robinson in the Stevens six in 57% seconds, while a Corbin did it in 58% seconds. Event No. 11, a free-for-all for steam cars, brought out no entries, while No. 12, open for gasoline cars, established the fastest time of the day, Grady in a Pope-Hartford, stripped, tearing up the slope in 56% seconds. No. 13, the last event on the card, a slow race on the high gear for gasoline cars, went to Kulick in the big six Ford, who made the climb in 6 minutes 58 seconds, while a Knox went in 3 minutes 59 seconds. This novel trial excited considerable interest. Summary:

Event No. 2, runabouts, gasoline stock cars, selling \$1,000 or less—Maxwell, 1:08 3-5; Ford, 1:08 3-5; Ford, 1:11 3-5. Maxwell protested because of the contention on the part of Ford interests that it was not a stock car. Tie not run off.

Event No. 2, runabouts, gasoline stock cars selling for \$1,001 to \$2,000—Jackson, 1:19 1-5.

Event No. 3, touring cars, selling for \$1,001 to \$2,000—Franklin, 1:15 3-5; Jackson, 1:17 4-5.

Event No. 4, runabouts, gasoline stock cars, selling for \$2,001 to \$2,500—Knox, 1:02 2-5; Pope-Hartford, 1:02 2-5; Corbin, 1:03 2-5. Event a tie; not run off.

Event No. 5, touring cars, selling for \$2,001 to \$2,500—Pope-Hartford, 1:01 4-5; Corbin, 1:07 4-5; Knox, 1:09; Knox, 1:14 3-5.

Event No. 6, runabouts, gasoline stock cars, selling for \$2,501 to \$3,000—Corbin, :57 1-5; Ford six, 1:00 1-5; Pope-Hartford, 1:05 1-5; Oldsmobile, 1:11; Autocar, 1:13 2-5.

Event No. 7, touring cars, gasoline stock cars, selling from \$2,501 to \$3,000—Corbin, 1:08 2-5; Pope-Hartford, 1:08 3-5.

Event No. 8, runabouts, gasoline stock cars, selling from \$3,001 to \$4,000—Thomas, 1:06 4-5.

Event No. 9, touring cars, gasoline stock cars, selling for \$3,001 to \$4,000—Stevens six, 1:51. Allowed another trial because of interference at the turn; time, 1:01.

Event No. 10, free-for-all, gasoline stock cars—Stevens six, :57 2-5; Knox, :58 1-10; Corbin, :58 3-5; Mercedes, 1:14 4-5.

Event No. 11, free-for-all, steam cars—No entries.

Event No. 12, open for gasoline stock cars—Pope-Hartford, :56 2-5; Stevens, :56 3-5; Corbin, :57; Mercedes, 1:08 1-5; Thomas, 1:10 4-5.

Event No. 13, special slow high gear race for gasoline stock cars—Ford six, 6:58; Knox, 3:59.

Event No. 14, open for motor cycles—C. W. Goerke, Indian, 1:08.

Event No. 15, motor cycles, not to exceed 18 cubic inches piston displacement—Charles Gustafson, Indian, :56 4-5; S. T. Kellogg, Indian, 1:16 2-5; C. W. Goerke, Indian, 1:21.

DARRACQ WINS HALF-CENTURY

Pittsburg, Pa., Sept. 15—E. D. Nevin, of Pittsburg, in his 40-horsepower Darracq won the 50-mile event the third day of the Brunots' Island races. He made the half century in 58 minutes 40% seconds in one of the most dangerously exciting races ever seen on the famous track. Six cars started in the race—a Franklin owned by Robert Thompson and driven by A. Palmer, a Pope-Hartford owned by the American Automobile Co. and driven by R. J. Husted, a Stevens-Duryea owned by Clyde Overholt and driven by C. A. Collier, a Stevens-Duryea owned by Bunker Brothers and driven by James Kerr, a Darracq owned and driven by E. D. Nevin, and a Columbia owned by Thomas McKay and driven by E. C. Bald. The other events were a 3-mile race for stock runabouts, won by a Franklin car, and a handicap for six-cylinder cars won by a Stevens.

HUB CARD A POOR ONE

Accidents Spoil Motor Sport At Readville Meet—Small Fields Take Part in the Races

Boston, Mass., Sept. 14—The fall race meet of the Bay State A. A. was held at Readville this afternoon in the presence of a big crowd. The events had been postponed twice because of weather and the attendance was larger than had been expected. There was very little about the meet to make it worth while to watch, for the program as originally made up and later amended fell short when it was carried out. From the viewpoint of the spectator seeking excitement and the man interested in learning the merits of various cars it was not a success.

The only thing on the program that aroused any enthusiasm was the first heat of the match race between Baldwin and Marriott, when the former created a

The third event was a 20-mile race for roadsters. There were four entries in this—a Berliet driven by H. F. Grant, an American with W. A. Fredericks driving, a Corbin handled by Joe Mattson and a Premier with J. S. B. Knox up. The Berliet won. The other positions were: American, second; Corbin, third; Premier, fourth. The time was 22 minutes 19% seconds. A 3-mile exhibition against time in the Napier that 2 years ago won the Mount Washington climb was then put on and the driver, F. C. Hoyt, sent the car around in 3 minutes 2 seconds.

The final event, the stripped stock chassis race, had four starters, the Berliet, American, Corbin and a Ross steamer. The first was driven by Grant, the American by Andrews, the Corbin by Mattson and the steamer by Waitt. The first few miles found the Berliet and the American fighting it out, with the former leading, but the latter clinging on in good shape. Gradually, however, Grant shook off the American and he began to lap the others. Waitt could not get his car working just right and he was last, with the Corbin third.

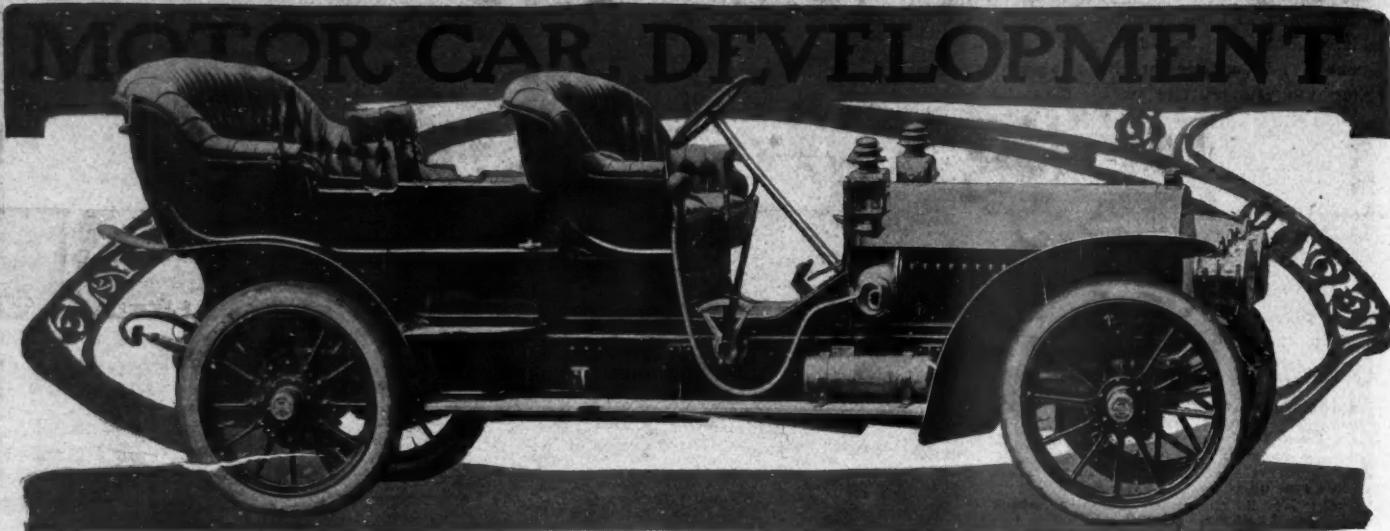
In the forty-fifth mile, when the Berliet was leading the American by 2 miles and the Corbin by 4, the front tire on the right wheel blew out. That meant a run at slow speed once around the track to a repair station. Then it took 11 minutes to make repairs. The lack of a detachable rim never was more strikingly shown, for had the car been so equipped it would have won. The American at the same time had some ignition trouble and had to stop. So the little Corbin plodded merrily along with never a skip and soon was in second place, then first, and when the Berliet got ready to go once more the Corbin was 4 miles in the lead and had but 1 mile to go. So the Corbin won, with the Berliet second. The American withdrew and the Ross steamer finished third. The times for the 50 miles were: Ten miles, 11 minutes 1 second; 20 miles, 21 minutes 51% seconds; 30 miles, 32 minutes 44% seconds; 40 miles, 43 minutes 39 seconds; 50 miles, 1 hour 2 minutes 13% seconds.

WINTON SHOW ON ROAD

Chicago, Sept. 16—After a 3 days' show at the local branch the Winton transcontinental train resumed its progress toward the Pacific coast last night, going from here to Milwaukee, from which point it will jump to St. Paul and Minneapolis. The visit of the Six-Ten Six aroused considerable enthusiasm among the six-cylinder devotees and while the show was on here three cars, one of them a roadster, was kept on the go all the time. Manager Day calculates that the novel way of displaying the new models has resulted in considerable new business.



BERLIEU AND AMERICAN AT READVILLE MEET



SIX-CYLINDER BERLIET TOURING CAR FITTED WITH HIGH-TENSION IGNITION

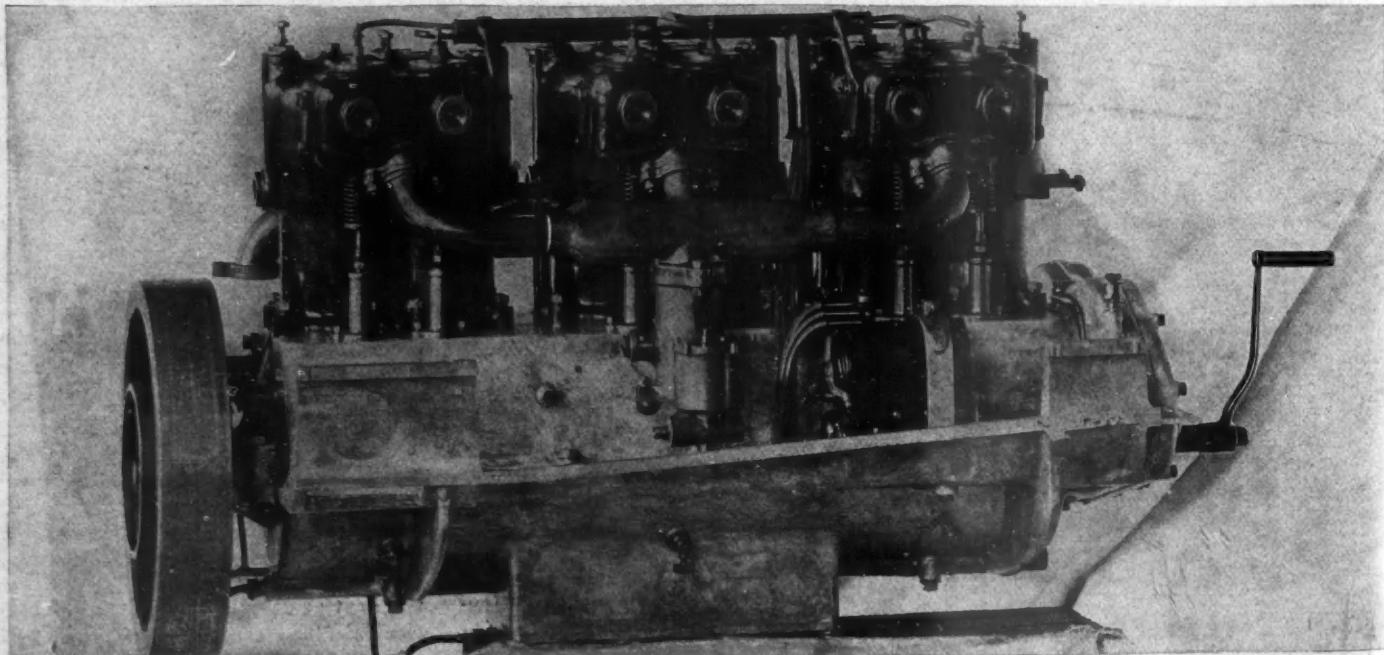
THREE Berliet models are offered for next year by the American Locomotive Automobile Co., Providence, R. I., two of which are four-cylinder machines, one a six. Two are chain-driven vehicles and the other shaft-driven. The six-cylinder marks a departure in the policy of this company—by the addition of a pair of cylinders and further in that the low-tension "make-and-break" magneto ignition is replaced by a high-tension magneto system. Also the smallest model is a shaft-driven car, the first of its kind marketed by this company. The six-cylinder machine is rated at 60 horsepower, has a four-speed selective gearset, 112-inch wheelbase, a set of four brakes and a short bonnet. The larger four-cylinder car has a rating of 40 horsepower, with cylinders $4\frac{1}{4}$ by $5\frac{1}{2}$ inches bore and stroke, the same size as used in the six-cylinder car. The little four, rated at 24 horsepower, follows Berliet features in general except

for the use of shaftdrive, the consequent changes in rear axle and brake construction necessitated thereby. It has a 112-inch wheelbase and $3\frac{1}{2}$ by $4\frac{1}{4}$ inch cylinders. In all models road wheels are 36 inches in diameter in front and $36\frac{1}{4}$ inches in rear and tires range from $3\frac{1}{2}$ to 4 inches in front and regularly $4\frac{1}{4}$ inches on the rear wheels.

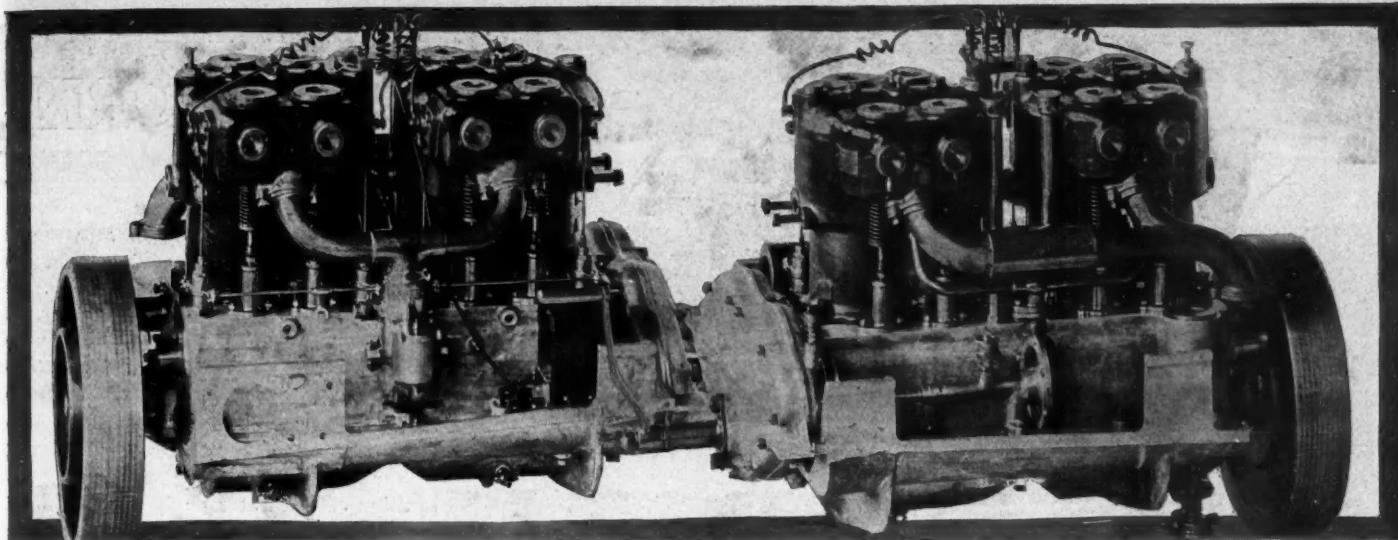
Glancing over the four motor illustrations, it will be noted that the 1908 Berliet is fashioned closely after its predecessors of this season in that cylinders are cast in pairs, with valves located oppositely and intakes on the right. The observer will further become convinced of the similarity existing between the four and the six, identical designs appearing in both. The carburetor and magneto are on the right side, the carburetor central on each, but the magneto close in the rear of the half-time gear housing on the four, but further back in the six. On the

The Six-Cylinder

left side are the pumps—water and oil—the former about in the center on the four, but forward in the six. The oil pump is in the rear of the crankcase in each. Instead of making the motor crankcase with separate transverse arms, it is formed with a webbing uniting these arms, forming a mud apron as well as a bed for the water pump and magneto. Characteristic in both the four and the six are the heavy webbings on the under side of the crankcase. The six intake pipe is somewhat simpler than those used on most sextet motors in that it is a horizontal pipe placed close to the cylinders, and with its central part—opposite the middle pair of cylinders—of larger diameter than the remainder of it. The carburetor is carried directly beneath the center of this expansion. These intakes have an angular union with the



INTAKE SIDE OF BERLIET SIX-CYLINDER MOTOR SHOWING CENTRAL EXPANDED PORTION OF INTAKE MANIFOLD



THE INTAKE SIDE

BERLIEU 1908 FOUR-CYLINDER MOTOR

THE EXHAUST SIDE

1908 Berliet Car

valve chambers. The exhaust manifold follows that design popularized by Fiat builders—a one-piece manifold with an integral branch to each cylinder pair and with the rear end sloping rearward beneath the dash.

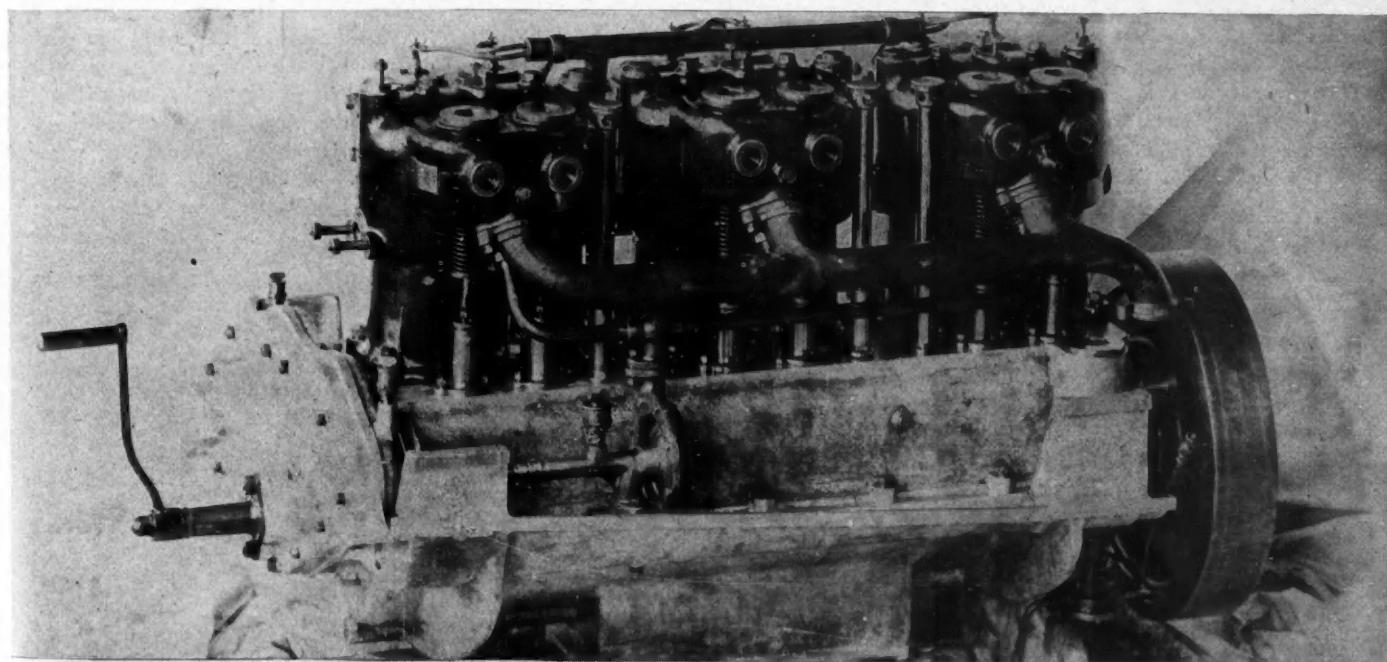
Ignition in the six is by high tension, with spark plugs carried vertically in the intake valve covers, the magneto used having a self-contained high-tension distributor. In the four-cylinder the make-and-break parts are carried in triangular plates on the ends of the intake valve chambers, with the action accomplished by short lifters worked by cams on the intake camshaft. In the six these openings are closed by the triangular ends of brackets, which carry the tubes for conveying the wires to the spark plugs. Lubrication is a self-contained system, in which an oil

reservoir is cast in the lower part of the crankcase, the pump drawing it from this pump and forcing oil to all motor parts. Once used the oil drips into the crankcase and is filtered back to the reservoir, ready for the oil pump.

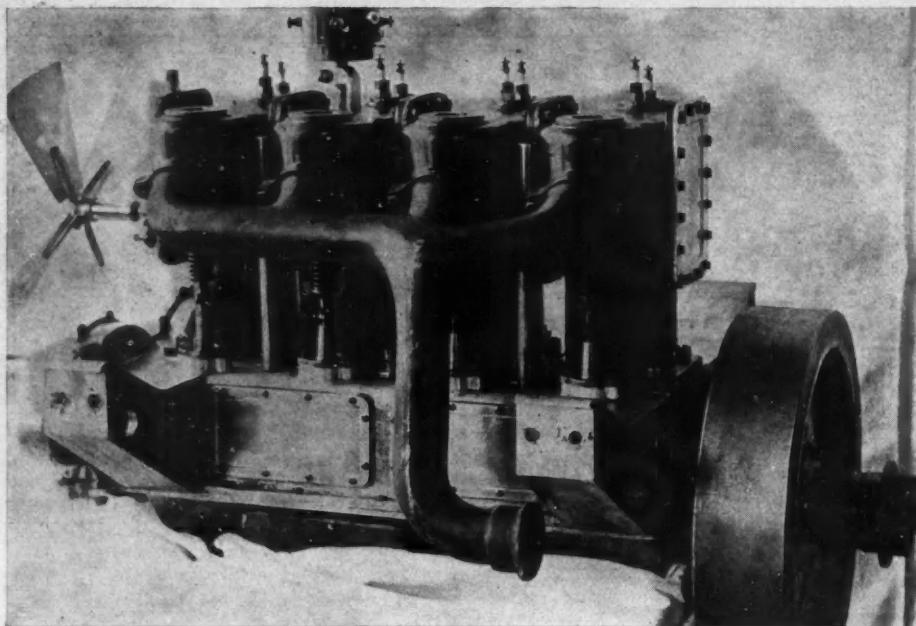
The multiple disk clutch used this season is continued. It operates in an oil-tight compartment within the flywheel. In the selective gearset provision is made for four forward speeds with direct drive on the third and fourth, achieved by using double bevels on the gearset shaft and on the differential gear. A sliding clutch sleeve operating between the two bevels on the shaft of the gearset locks either of the bevels as desired. As in the motor so in the gearset vanadium steel is used and figures prominently in those parts where strength and elastic limit are requisites.

A distinctly straight line body is used on the six, a body in which the bonnet is par-

ticularly short—so short that it does not betray the presence of the six cylinders. In the tonneau is accommodation for five, three on the back seat and two on auxiliary seats, made with folding backs. The body lines flavors of the foreign in that the high tonneau is wanting. Beneath the rear of the chassis is the large rectangular gasoline tank, from which the gasoline is fed by pressure to the carburetor, the same as regularly used on the company's four-cylinder models in the past. The radiator is a cellular construction, the dash a straight wood member, and fenders and running boards much as this year. Both axles are I-beam designs, the forward one with the tie rod between knuckles in rear of it and bent to conform with the contour of the axle. Brakes are as heretofore. The bodies on the four-cylinder cars are according to the buyers option, the company preferring to sell the chassis and have the buyer get the body where he likes best.



EXHAUST SIDE OF BERLIEU SIX-CYLINDER MOTOR WITH WATER PUMP AND OIL PUMP AT THE REAR



YORKE PULLMAN 40-HORSEPOWER MOTOR WITH HIGH-TENSION DISTRIBUTOR

FIVE models for 1908 of the Yorke Pullman are announced, four of them are four-cylinder machines and one a six-cylinder roadster; three of them—models I, J and 4-40—are fitted with the same 40-horsepower four-cylinder motor; another is model 6-30, and which is a 30-horsepower six-cylinder roadster and also a 20-horsepower four-cylinder car. The cars all are built by the York Motor Car Co., of York, Pa. The largest model J, 40-horsepower, has seven-passenger accommodation, 118-inch wheelbase, four-speed selective gear-set with direct drive on the third speed, double ignition system with current furnished by magneto and batteries, and 34 by 4-inch wheels. Model I, a five-passenger touring car, has practically the same parts but is not fitted with a top, glass front, magneto or extra tonneau seats. It has a single ignition system with battery current. Model 4-40 is a roadster with the same motor as used in the J and I touring cars, but has a shorter wheelbase—108 inches—has the double ignition system and a three-speed selective gearset in place

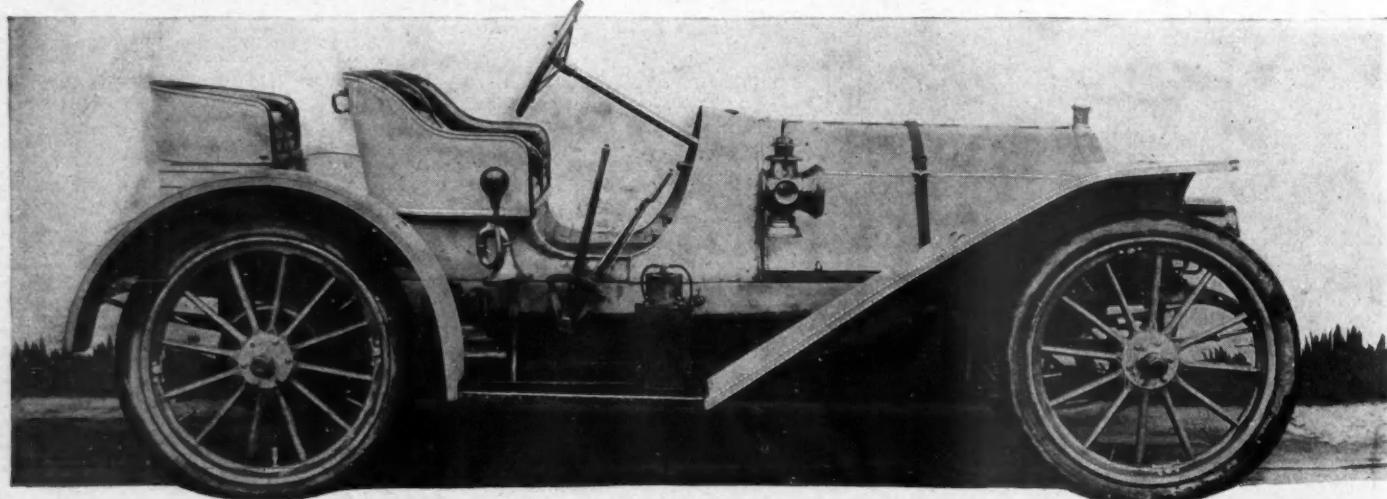
of the four-speed sets of the touring cars. Like the two touring cars it has 34 by 4-inch tires. The six-cylinder roadster, model 6-30, has 104-inch wheelbase, double ignition, three-speed selective gearset and 34 by 3½-inch tires. This analysis shows the company's output to consist of two touring cars, two roadsters and the 20-horsepower model, to be announced later.

All Yorke Pullman cars, as they are labeled, are shaft-driven creations with a pair of universal joints in the shaft. Annular ball bearings figure prominently in the gearsets of all models, plain bearings throughout are in the motors and Timken rollers in the axles and road wheels. Cone clutches with leather facings are general in them all. Mechanical lubrication of the motors is standard and chrome nickel steel is used in shafts and gears of the transmission.

Although those familiar with Yorke cars will not have any difficulty in recognizing the peculiarities of design followed by this company, yet the changes over the 1907 cars are such as to make it evident to the public that the company,

1908 YORKE

while clinging to a few of its original features, is determined to build a car in which is combined the majority of the acknowledged present-day tendencies. As compared with the '07 model E car the 1908 models show this trend in the use of selective gearsets, in the introduction of the magneto and in some of the motor reforms. In motor changes must be noted the making of the cylinder castings with valves on opposite sides, improving the location of the water pump by carrying it on the right front motor supporting arm and gearing it direct and housing the gear in the aluminum casing at the front of the motor. In one respect for 1908 the company has returned to its first love in that it now casts its cylinders much the same as in the 1906 car. The peculiarity of this casting is that there is a continuous waterjacket throughout the four cylinders, made possible by casting the cylinders without waterjackets on their front and rear faces, but having large openings with flanges so that when the cylinders are mounted these flanges adjoin and form a passageway between the jackets of adjacent cylinders, the entire result being the same as if the four cylinders were cast in a single unit. This plan was followed 2 years ago, but it was dropped in the model E cars of the present season. Besides offering the continuous water way through the four waterjackets, this method has the advantage of giving continuous bracing for the cylinder heads as well as allowing of cleaning the core spaces well in the casting. By this method each cylinder is independent and can be taken out without disturbing any of the others. With it the water from the centrifugal pump is delivered to the jacket of the rear cylinder and travels forward through all of the jackets, escaping from the top of the front cylinder jacket to the top of the tubular radiator. Considerable simplification in

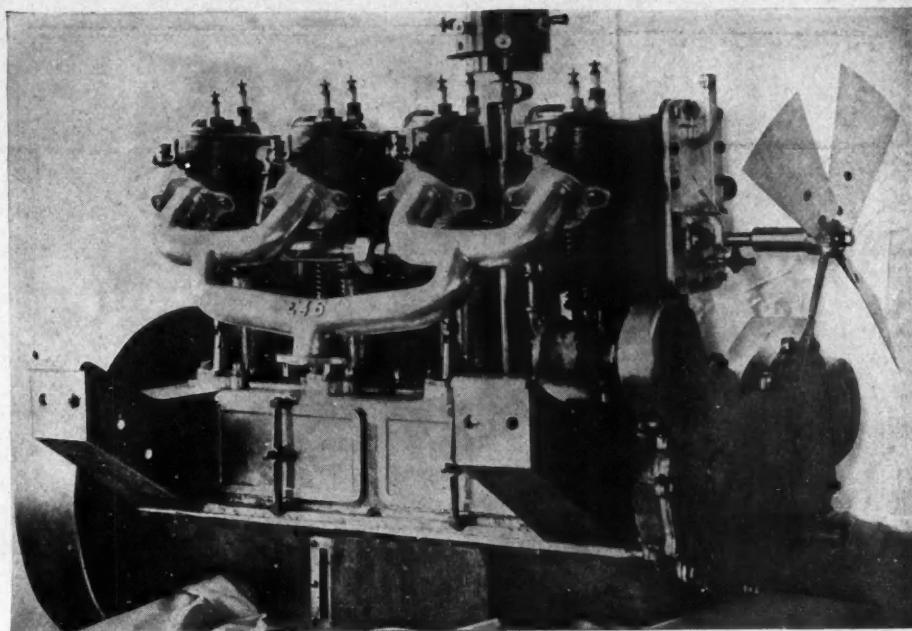


YORKE PULLMAN 6-30 ROADSTER, A SIX-CYLINDER, 30-HORSEPOWER, THREE-PASSENGER CREATION

PULLMAN CARS

water piping is thus accomplished. The centrifugal water pump, used for the first time, has a capacity of 8 gallons per minute and drives through a twelve-pitch gear at the same speed as the crankshaft. Assisting the water in cooling the motor is a four-blade fan carried on the front cylinder with its hub made of steel tubing revolving on adjustable ball bearings. The fan has sheet aluminum blades riveted to a manganese bronze center portion. Both illustrations of the motor disclose the double spark plug system as used in the model J touring car, although the magneto is not shown in position in either illustrations. One set of plugs is placed in the caps over the intake valves, the other in the cylinder heads as near as possible to the intake valves. A change has been made in the high-tension distributor in that it is now mounted between the first and second cylinders instead of in the rear of the fourth cylinder. Its bottom is flush with the top of the cylinders and but one adjustment is provided. There is one point of contact for all four cylinders and the points that contact are platinum. It runs in an oil bath, is enclosed by a glass cover and is driven by bevel gears from the camshaft, bronze bearings supporting the vertical shaft. In advancing or retarding the spark the central post is moved, the outer casing to which the high-tension wires are attached remaining stationary. When the magneto is not used current is taken from a 6-volt 60 ampere-hour storage battery with a set of six dry cells in reserve.

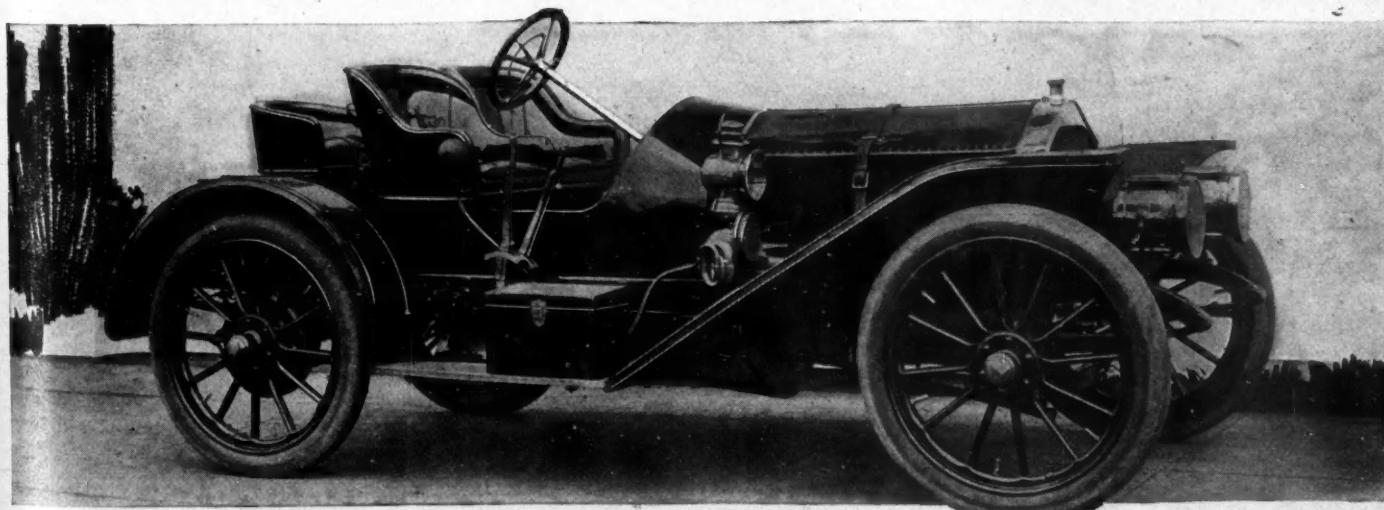
Lubrication is provided by a six-feed oiler carried on the dash and from which four leads go to the cylinders and the remaining two to the crankcase base which is piped by branches that feed to each of the five bearings of the crankshaft.



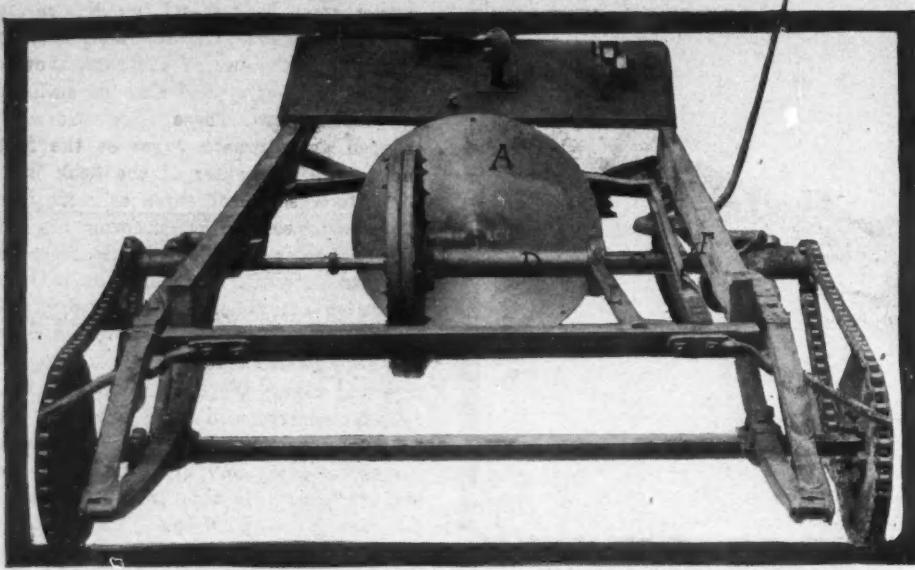
YORKE PULLMAN MOTORS HAVE A CONTINUOUS WATERJACKET SPACE

Viewed structurally, the 1908 Yorke motors are well abreast of the times. All cylinders are ground to within 1-1,000 of an inch; pistons are ground on machines designed for the purpose and taper from the lower ring downward; wristpins are made from special steel, and dropped forge carbon steel connecting rods of 65,000 pounds tensile strength carry removable Parson's white brass bearings at the lower end and Cramp's special bearing bronze at the upper end. The crankshaft, cut from a billet of steel, is machined and ground to 1-1,000 of an inch and is offset from the cylinders. It revolves on five Parson's white brass bearings and has an integral flange to which the flywheel is bolted. Both camshafts, carried on three long bronze bearings, are removable from the front end by removing two bolts, one pin at the rear and a set screw which holds the center bearing. Like the crankshaft they are offset from the center line of the valve in order to give a lifting motion without side strain or push. Half-time gears are made from manganese

bronze with a center insert of hard-bearing fiber. Valves, regularly interchangeable, are made from nickel steel forgings, with seats beveled to 45 degrees and ground to a finish. Each piston is fitted with three $\frac{1}{16}$ -inch rings above the wristpin and one oil-retaining ring below it, together with an oil groove which takes the oil and distributes it around the rings and through the wristpin. The engine base, an aluminum casting, is carried on the car framework through four integral I-beam arms. Four inspection plates are furnished, the two on the right held in place by yokes with set screws, those on the left secured by screws. The casing for the half-time gears is a separate casting bolted to the engine base and the bottom pan of the crankcase—an aluminum casting—has four oil compartments, one beneath each of the cylinders. A sight-feed gauge cast with the bottom pan shows the oil level in the crankcase. The flywheel, 18 inches in diameter with 4-inch face, is fastened to the crankshaft flange by three studs and is held in place by three extra bolts. The



YORKE PULLMAN 4-40 ROADSTER, A FOUR-CYLINDER, 40-HORSEPOWER RUNABOUT



BLACK FRICTION TRANSMISSION FOR MOTOR CARS

inside diameter of its clutch face is $15\frac{1}{2}$ inches. This face is 3 inches wide, is turned to a 12-degree taper and is fitted with cork inserts.

The clutch, $15\frac{1}{2}$ inches in diameter, is faced with vim leather riveted to the aluminum cone and the clutch pedal is compounded so that a slight pressure with the foot is sufficient for disengagement. This in turn engages two clutch brakes for stopping its rotation when changing gears. Peculiar in the four-speed selective gearset is the use of direct drive on the third speed as well as having all reverse gears idle when driving ahead. Gears are of six-pitch, $1\frac{1}{8}$ -inch face, and are turned from forged bars of chrome-nickel steel, after which they are machined on the pitch line to within 3-1,000 of an inch. They are finally hardened and oil-treated. Shafts for carrying these gears are chrome-nickel members with four integral keys for the sliding gears. All bearings are of the imported annular non-adjustable ball type and with all working parts are completely enclosed and run in oil. Housing these gears and shafts is a cast aluminum case with four supporting arms by which it is carried on the sub-frame of the car. Gear changes are made through a lever operating in an H quadrant. With the quadrant hinged at the change gear shaft it automatically stands in neutral at the center of the H. When changing gears a sliding movement, either right or left, engages one of the gear-shifting levers which operates the selective one and automatically locks the remaining gears. Between the clutch and gearset is a double universal joint in which are used removable square blocks. Connecting the transmission with the rear axle is a shaft with a couple of universal joints, both automatically lubricated and protected from water, dust and dirt. The rear axle is a Timken construction of the floating or clutch-driven type. The driveshafts in it are $1\frac{1}{2}$ inches in diameter and squared where they enter the gears of the differen-

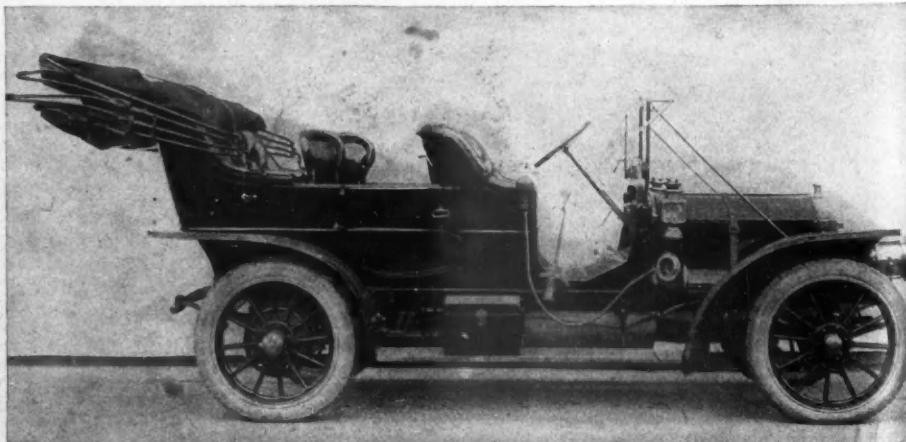
tial. The pinionshaft is fitted with two sets of Timken bearings. Spring seatings are loose on the axle but end movement is prevented. The axle tubing is $2\frac{1}{2}$ inches in diameter with a $\frac{1}{4}$ -inch wall.

The front axle is an I-beam chrome-nickel forging with jaw endings for taking steering knuckles fitted with roller bearings. Internal foot-applied brakes operate on 12-inch drums on the rear wheels, and have the expanding shoes faced with camel's hair, which bears upon the metal of the drum. The lever-applied emergency brakes are bands which clamp upon drums, 14 inches in diameter with 3-inch face. These bands are lined with camel's hair. Yorke cars are examples of that class in which the internal and external brakes do not operate upon the same drum but upon concentric drums of 12 and 14-inch diameter respectively. The value of brakes of this nature is that the operation of one set does not heat the drums on which the other set acts. The nickel steel frame is narrowed 2 inches in front and carries the motor direct but uses a sub-frame for supporting the transmission. The steering gear is of the screw type, supplied with a ball-bearing cone to take up lost motion. On the steering wheel are spark and throt-

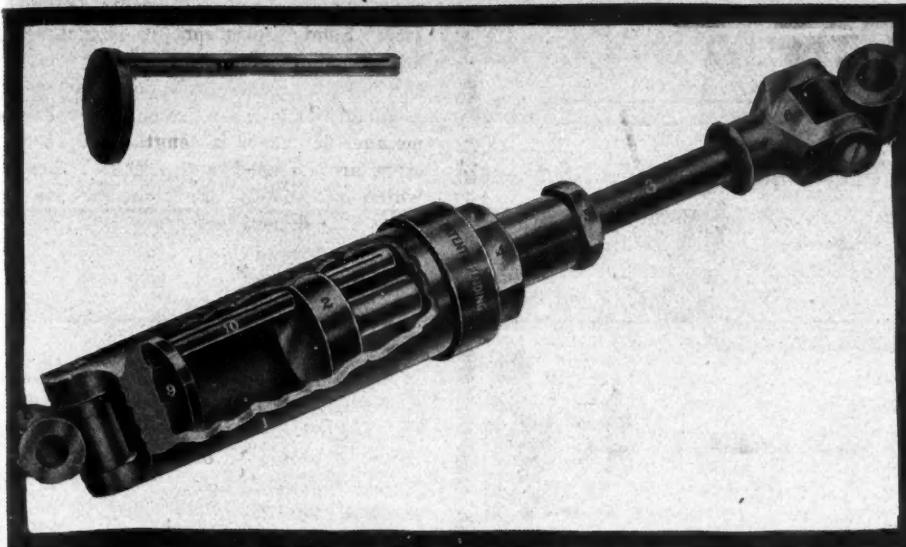
tle controls mounted on a stationary quadrant. Semi-elliptic springs 41 inches long and $2\frac{1}{4}$ inches wide are used in front and the platform rear suspension has the side members $43\frac{1}{2}$ inches long and the cross member 55 inches in length. Yorke roadsters are supplied with racy bodies, in which the hoods are strapped, steering posts well sloped, rear fenders semi-circles, front fenders rational and running boards short.

BLACK FRICTION TRANSMISSION

The Black Mfg. Co., Fort Wayne, Ind., is marketing a type of friction transmission which is suitable for side chain drive. On the rear end of the motor shaft is carried a 20-inch friction disk A, faced with $\frac{1}{8}$ -inch aluminum held by peripheral countersunk screws. This disk is heavily webbed radially to increase its strength and is keyed and set screwed to the crank-shaft. Crossing the rear face of it is a horizontal shaft C, on which is slidably mounted an 18-inch friction wheel B, the tire of which is fiberoid, $\frac{5}{8}$ -inch wide, 1-inch deep, and held thereon by thirty-six screws. This friction pulley is brought into contact with the disk by the pedal shown in the center of the footboard. In combination with this pedal is a locking device for retaining the wheel at any tension. The friction wheel is shifted to its different positions on the face of the disk by the side lever seen in the illustration, which interconnects with a sleeve D, which carries the friction wheel B by the double link connection E and F, the link E being an L-shaped one pivoted at its angle on the crosspiece of the frame, with its long arm yoked and embracing the outer end of the sleeve D. The cross shaft C, with sprockets on its outer ends for chain drive, is supported in end bearings, which are carried by bolts through the main frame. On the left end of the cross shaft C is an adjustable collar anchored in any position by set screw, the use of this collar being to regulate the extreme position of the friction wheel B. Readers will understand that when friction wheel B contacts with the left half of the disk A forward drive is obtained, and



YORKE PULLMAN MODEL J, WITH SEVEN-PASSENGER BODY



COMSTOCK AUTOMATIC HYDRAULIC SHOCK ABSORBER

when moved past the center of the disk A and contacted with the right half of the disk a reverse drive is obtained. In this style of transmission the differential gears are eliminated, the idea being that sufficient slippage will take place between the friction wheel and the disk to allow for turning corners.

SELF-ADJUSTING ABSORBERS

Herbert C. Comstock is the inventor of a hydraulic self-adjusting shock absorber marketed by the Comstock Shock Absorber Co., 1775 Broadway, New York. An analysis shows this absorber to consist of a cylinder, in which operates a piston or plunger 2 carried on the plunger rod 3, which connects by universal couplings 6 and 7 with the frame of the car, while the lower end of the cylinder 1 has a universal coupling 8 with the car axle. In the upper end of the cylinder 1 is a separate piece 4, in which is a stuffing box 5 for making an oil-tight cylinder. Next comes the operation of this device. Being a hydraulic absorber, the interior of the cylinder 1 is filled with some liquid, presumably certain grades of oil or glycerine, and the absorption of shock is caused by the rate at which the liquid passes from one side of the piston 2 to the other. This piston is tight-fitting in the cylinder, and the only way for the oil to get from one side of it to another is through recoil valve tube 10, which at one end is anchored in the valve 9. At the other end it passes through an opening in the plunger 2. In the tube rod 10 is a slot so the oil can enter this slot and flow through the bore of the tube. The area of the opening in the top of the recoil valve slotted tube is equal to one-half of the area of the entire slot. The diameter of this recoil valve 9 is slightly less than that of the cylinder. The correct position of the plunger 2 when the car is loaded with passengers is in the center of the cylinder 1. The first or downward shock forces the plunger downward, seating the recoil valve 9 on the bottom of the cylinder. As the plunger 2

is forced downward the resistance offered by the liquid becomes greater and the escape of the liquid through the valve tube 10 becomes correspondingly freer until the down shock is entirely absorbed. The action of the recoil which starts the plunger 2 up again forces the liquid downward through the top of the slot in the valve tube 10, and as there is a space of about $\frac{1}{4}$ inch between the top of the valve tube and the cylinder top the oil, being forced beneath the recoil valve, unseats it and permits the plunger 2 to return quickly enough to eliminate the recoil. The particular feature in the instrument is that the tube 10 is slightly shorter than the cylinder length, so that on the down stroke of the plunger the first part of the stroke is very gradually cushioned until the valve 9 rests against the bottom of the cylinder, after which the cushioning gradually becomes more severe.

MOTOR CAR LITERATURE

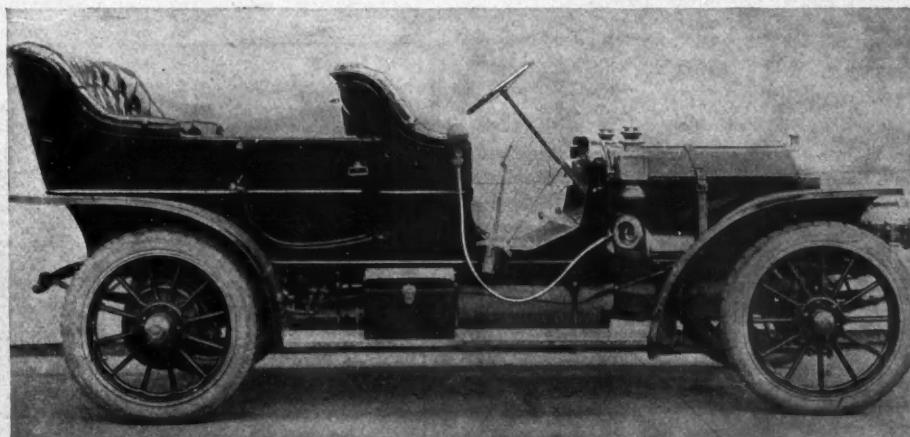
The de luxe catalogue fever has struck another firm, this time the Stevens-Duryea Co., which has come out with a seventy-page cloth-bound volume 10 $\frac{1}{2}$ by 8 inches in size. The front cover is an embossed design on a gold background. Each page throughout the volume is surrounded by a

narrow green border and the illustrations are all in colors. In all there are sixteen full-page views of the cars, showing them in front of typical Chicago buildings and landscapes. These illustrations are grouped on alternate pages at the front and rear. The center of the book is devoted to a series of three or more illustrations on each page, showing the unit case and three-point Stevens construction, together with the arguments on it. Following this is a series of colored chassis illustrations, as well as power plant views. The information throughout is argumentative and covers the field of six and four-cylinder construction very carefully. The book is a most creditable production throughout, the only criticism being that the brass work on the car is shown up in two bright yellow ink. This company also has brought out a paper-covered catalogue on the Stevens-Duryea limousine. The illustrations are pasted on the upper half of the pages, the lower half being empty excepting for the name of the car model on which the body is fitted. The last four pages are given over to specifications of limousine bodies in which the measurements are given.

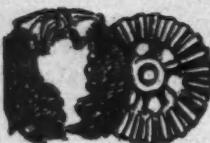
The E. R. Thomas Motor Co. has in circulation a booklet on the Thomas motor livery cab. The booklet is very elementary, consisting of eight pages showing the landauet cab, a little dissertation on motor cabs and specifications.

In its latest catalogue the Empire Automobile Tire Co., Trenton, N. J., uses good judgment in its illustrations by showing the factory, a cross section of the tires, the Empire inner tubes, repair kit, patches, valve bases, inner tube cases, tire covers, repair pads, tire protectors, perforated mats, corrugated matting as well as giving sizes and prices.

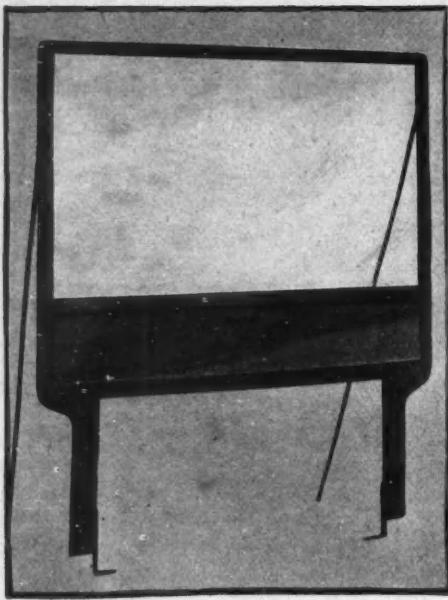
Carrying the title of Hercules is an oblong booklet of sixteen pages intended to show the construction and merits of Hercules shock absorbers as built by the Hercules Auto Specialty Co., Chicago, Ill. Out of the ordinary is a page showing the Oldsmobile car which won the Los Angeles-San Francisco road race on which were these shock absorbers.



YORKE PULLMAN MODEL I, FIVE-PASSENGER ACCOMMODATION



DEVELOPMENT BRIEFS



FELLWOCK WOOD FRAME WIND SHIELD

MANUFACTURERS' MISCELLANY

Joseph N. Smith & Co., Detroit, Mich., are marketing a panel door lock for tonneaus which incorporates with it a door guide for the prevention of sagging. With the door open the engaging hook is contained by the body of the lock, leaving no projection on which clothing can be caught and torn. Upon closing the door the hook, when engaging, exerts a drawing strain upon the door post which is intended to prevent rattling. The lock is operated by a T or lever handle.

Another buggy car is on the market, this one being manufactured by the Reeves Pulley Co., Columbus, Ind. It is fitted with the company's two-cylinder air-cooled motor recently described in Motor Age. The motor is mounted crosswise in rear of the seat. A peculiar style of friction transmission is used. It has 72-inch wheelbase, 42 and 46-inch wheels with 1½-inch solid rubber tires and weighs 975 pounds.

The Industrial Engineering Co., Cleveland, O., markets a 25-horsepower, double-opposed, water-cooled motor for commercial truck use. It has a bore of 4½ inches, 5-inch stroke and is designed so that one valve serves two cylinders, both for the intake and exhaust, this valve being placed in a cylindrical chamber above and between the ends of the cylinders so that the shaft operating the valves lies over the center of the crankcase.

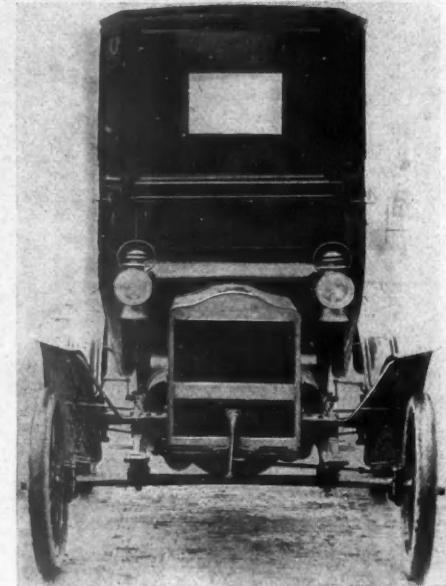
The Postal Auto and Engine Co., Bedford, Ind., is preparing for a large manufacture of the 12½-horsepower buggy runabouts for the coming season. As heretofore, the car will have a two-cylinder, opposed, air-cooled motor carried longitudinally under the body and will drive through

Fellwock a Maker of Parts

Of the several motor car accessories manufactured by the Fellwock Auto and Mfg. Co., of Evansville, Ind., the motor car turntable, the windshield and the tonneau for Maxwell runabouts are of interest to many owners and dealers. The turntable is a wood structure having a pair of boards 9 feet long and 12 inches wide on which the car wheels are run. These boards are held the required distance apart by three cross, or tie, boards and are braced by a couple of angle members. This framework is carried at its center on an ordinary pivot and requires a circle 9 feet in diameter to operate on, although the circular iron track is but 8 feet in diameter. The bearing carrying the table attaches by screws to either wood or cement floors and the turntable complete tips the scales at about 100 pounds. The windshield carries a 30 by 36-inch glass contained within an ash frame with a natural finish. The angling support rods are finished in black. Not illustrated is the tonneau for Maxwell runabouts, which is a detachable seat 36 inches wide and 17 inches deep, weighing all told 70 pounds. In attaching it bolts are not needed but hooks are furnished. It is claimed 1 minute is sufficient to detach or attach the tonneau. One of the illustrations shows a coupe top fitted to a Maxwell car, making a good vehicle for late fall and winter use. In many regards it conforms with the standard coupe top with its large glass front, side doors with large panels as well as large rear glass. Curtains may be used on all of the windows, as the user may desire.

a planetary transmission and chain to a countershaft and thence by steel cables.

The A. Streit Machine Co., Cincinnati, O., is manufacturing two styles of motors for cars, one a 16-horsepower opposed, the other a 24-horsepower four-cylinder vertical. The opposed motor has 5 by 5-inch

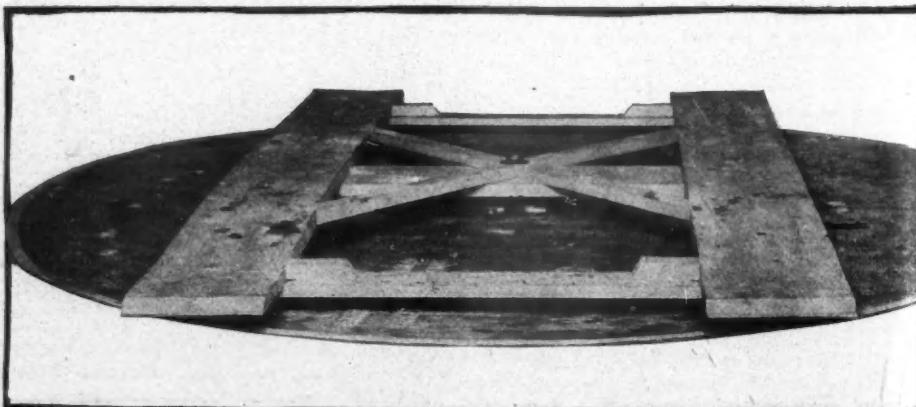


FELLWOCK COUPE ON MAXWELL RUNABOUT

cylinders with mechanical valve carried in chambers cast integrally with and above the ends of the combustion chamber.

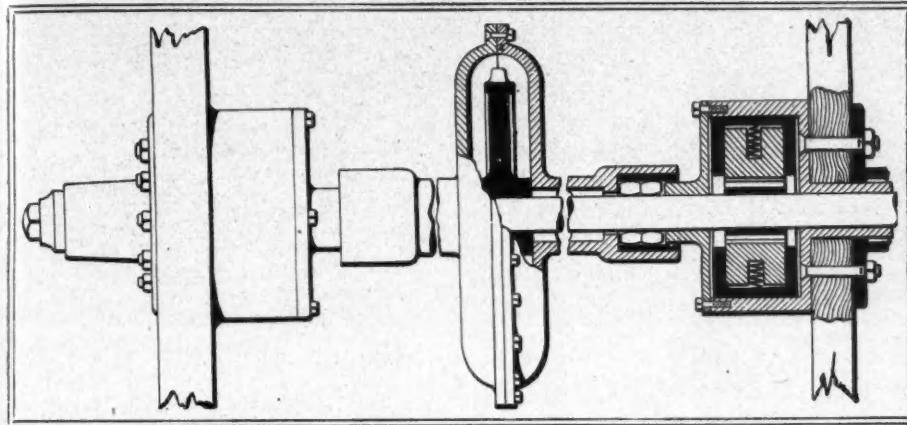
From the American Lava Co., Chattanooga, Tenn., comes information regarding a new type of acetylene burner known as the De Luxe. The pillar in this burner is highly polished brass and individually turned from a solid brass rod. It has a hexagonal base allowing the use of an S wrench in attaching or detaching. This pillar is threaded on the inside of the top and the lava burner tip is correspondingly threaded so as to screw in instead of being tapered and driven in under pressure as commonly done.

Victor adjustable tire holders sold by the Manhattan Storage Co., New York, are adjustable to any car and any size of tire. One arm fastens to the dash, the other to the end side of the front seat and a third to the footboard. The tire holding portion resembles a B with the vertical part removed and a strap substituted.



FELLWOCK WOOD TURNTABLE FOR GARAGES AND REPAIR SHOPS

CURRENT MOTOR CAR PATENTS



WENDORFF'S CLUTCH-DRIVEN DIFFERENTIAL SUBSTITUTE

Fuel Control Carbureter—No. 865,522, dated Sept. 10; to W. R. Park, Taunton, Mass.—This carburetor, made with a separate float chamber, is patented to include an adjustable needle valve for the gasoline supply and also adjustments for the entering air as well as the mixture passing to the motor. These three adjustments, the gasoline, the air and the mixture, are interconnected and can be varied at will by the driver.

Differential Substitute—No. 865,666, dated Sept. 10; to C. Wendorff, Chicago, Ill.—In the rear axle a solid shaft may be used from end to end with the bevel for drive from the propeller shaft keyed to this shaft. Within each wheel hub is a clutch device automatically operated, by means of which the wheel is held rigid with the shaft when the car is traveling straight ahead, but which mechanism is declutched to accommodate the wheel when turning corners. On the inner side of the wheel hub is a clutch drum. On the

axle shaft is a collar within this drum. Between the drum on the wheel hub and the collar is a complex clutching device, having plungers placed in them for radial movement and springs reacting between these plungers and the parts of the clutch which tend to hold the clutch outwards. To do this the plungers have at their inner ends oppositely sloping shoulders and the collars on the hub have correspondingly oppositely sloping shoulders for co-operating with them. The inner circumference of the clutch part carried on the wheel hub has a great many concave seats or recesses, giving it a corrugated surface, and each of the several clutch parts has two rollers for seating in these recesses and adapted to disengage therefrom readily. Means are provided on the axle for crowding these out or in by rotation of the axle, so that at one time the wheel may be free on the axle and at another time rigid with it.

Filled Tire—No. 865,698, dated Sept. 10; to J. J. Hender, Chicago, Ill.—The casing for this tire is of the clincher type, but the inner tube instead of being filled with air takes the filling of cellulose. This cellulose filling consists of granulated pith or corn starch placed within the inner tube before its ends are cemented together. After filled with this granulated substance air can be put in through the several valves, a series of valves being necessary owing to the difficulty of the air permeating all parts of the pith.

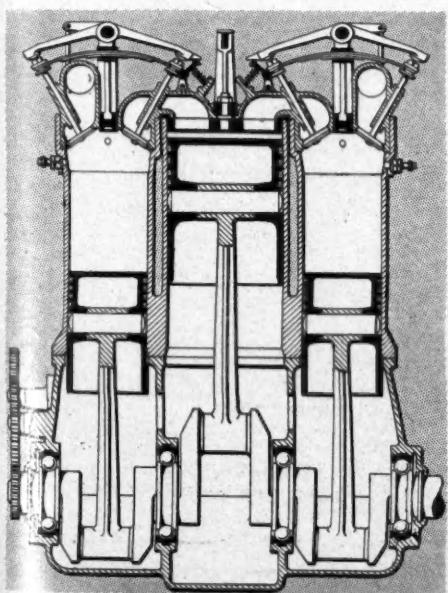
Reinforced Tire Tread—No. 865,443, dated Sept. 10; to T. J. Sprinkle, Hillsboro, O.—A continuous crescent-shaped rubber tread is positioned on the tread part of the tire casing. This reinforcement contains a layer formed by a mixture of rubber and fiber, together with continuous wires embedded in it, the wires extending longitudinally of the shield and lying upon opposite sides of the longitudinal axis. The wires are volute, with one of the volutes embedded in the ma-

terial at the edge of the shield and the other volute embedded in the material at the middle of the shield.

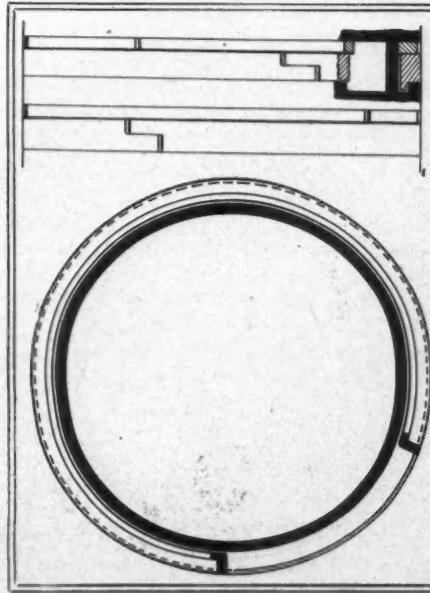
Compressed Air Motor Car—No. 865,496, dated Sept. 10; to F. G. Herrington, Decatur, Ill.—The compressed air motor located at any convenient part of the car receives its power from a compressed-air storage tank, a pipe establishing communications between the tank and the motor. Substorage tanks in communication with the main storage tank are fitted and air compressors discharge direct into these subtanks. The air compressors are driven by gearing from the rear axle of the car.

Double Piston Ring—No. 865,402, dated Sept. 10; to J. Kritzler, Kiel, Ger.—This patent relates to a style of piston ring, the expansion of which is limited, the idea being that a ring can only expand a limited amount in excess of the piston diameter. To accomplish this the ring is made in two parts, one L-shaped so that the foot of the L rests in a recess in the side of the groove carrying the ring. The remaining portion of the groove is filled by a smaller diameter spring ring.

Compound Engine—No. 865,213, dated Sept. 3; to J. Schaeffers, New York, N. Y.—The illustration shows this to be a three-cylinder vertical engine with the two end cylinders of small diameter and operating on the four-cycle principle. The intermediate cylinder of large diameter operates on the exhaust gases from the end cylinders, these gases being admitted through pipes from the combustion chambers of the end cylinders into the top of the intermediate, or, as might be called, low-pressure cylinders. The valves for admitting mixture into the high-pressure cylinders and the other are mechanical.



SCHAEFFER'S COMPOUND MOTOR



KRITZLER'S PISTON RING

THE REALM *of the* COMMERCIAL CAR



THE FARM TRACTOR THAT PLOWS 30 ACRES WITH 40 GALLONS OF GASOLINE IN 1 DAY

TO ANSEL S. WYSONG, a prosperous farmer near Mead, Kan., belongs the glory of plowing 30 acres a day with a fuel consumption of 40 gallons of gasoline, the plow used being a couple of three-furrow ones pulled along by a light traction engine in which the motor is a 30-horsepower one, the same as used in many motor cars. The illustration reveals the motor tractor in the form of a traction engine with the boiler and smoke stack eliminated, making it resemble a spectre tractor. This apparition effect is due to the small multi-cylinder gasoline motor mounted longitudinally in front of the large drive wheels and which is entirely excluded in the illustration. The motor tractor complete with its 4-inch iron tires on the drive wheels, its canopy top and all other accompaniments weighs 4,100 pounds. Drive from the motor shaft to the back axle is by chain. The long horizontal tank in front is for fuel and the short horizontal one in rear of the driver doubtless is for either fuel or water. When not used for plowing fields, the motor tractor can make a speed of 6 miles an hour on the road, pulling two wagons loaded with grain. When plowing and running on the low

speed it travels faster than a horse team and turns its six furrows at once. Springs are not used in connection with it, because it generally operates on soft land. When not used for tilling the soil or marketing produce it is used for stationary work such as driving the pump, working the churn, grinding feed and sawing wood.

DETAILS OF THOMAS CAB

Complete specifications are at hand of the motor cab intended for town service brought out by the E. R. Thomas Co., Buffalo, N. Y., and which vehicle has been designed by Gustave Chedru, formerly a designer in one of the Paris factories. The chief feature about this cab is that the 16 to 22-horsepower motor has its four cylinders formed in a single casting and the exhaust pipe is waterjacketed. The motor is carried on a three-point suspension. New in connection with this cab is carrying the three-speed-and-reverse selective gearset on the rear axle so that should repairs be necessary to either the axle or gearset this unit can be removed in a few minutes and another put in place so the cab may be kept in continuous operation. The carburetor is described as

an automatic one, waterjacketed, having an auxiliary air, and cast integrally with the crankcase. Ignition is by a Bosch magneto, lubrication is by forced feed and throttle and foot accelerator control are used. Water circulation is by the thermosyphon system, a fan only in the flywheel is made use of and the tubular radiator is carried in the rear of the front axle. The wheels are 32 inches by 4 inches, front and rear, and annular bearings are used on the crankshaft of the motor, camshaft, transmission and axles. The cab has a 100-inch wheel base, 54-inch tread and accommodates five passengers besides the driver. It is provided with a landauet body.

MOTOR CABBIERS STRIKE

Paris, France, has had its first experience of a motor cab strike. In spite of the dull season and lack of movement in the French capital, the motor cabs are an essential to Parisian life and public outcry is great. Out of about 3,000 cabs in service there are over 500 on strike, and these 500 are the favorite motor cabs—the red Renault. The loss of 500 out of 3,000 cabs may not appear to be serious, but the run on motor cabs is intensified by the absence of these 500, which makes the difference between a city with motor cabs on hire and a city where a motor cab free for a fare is difficult to find. However, it is not considered that the strike will spread. The causes are these: Gasoline has risen in large proportion during the last few months. The company owning the cabs sells the gasoline at about 30 cents a gallon, whereas the former price was 23 cents. This makes a difference to the chauffeurs; but another cause of disaffection is the fact that the percentage of receipts allowed to the chauffeurs is reduced from 15 to 12 per cent, and another grievance is the fine of \$12, \$24 and higher for the first and second time that a cab knocks down a foot passenger in the streets. The third time this happens the chauffeur is discharged. The cause of the trouble is competition among motor cabs and companies and private persons owning them. This is inevitable, but even as it is, Paris



MITCHELL 1-TON TRUCK ON CHICAGO-NEW YORK TRIP

chauffeurs are stated to be making a minimum profit in the slackest of seasons of \$2 per day. Paris first placed motor cabs in service, and suffers the effects of the first strike among the many chauffeurs.

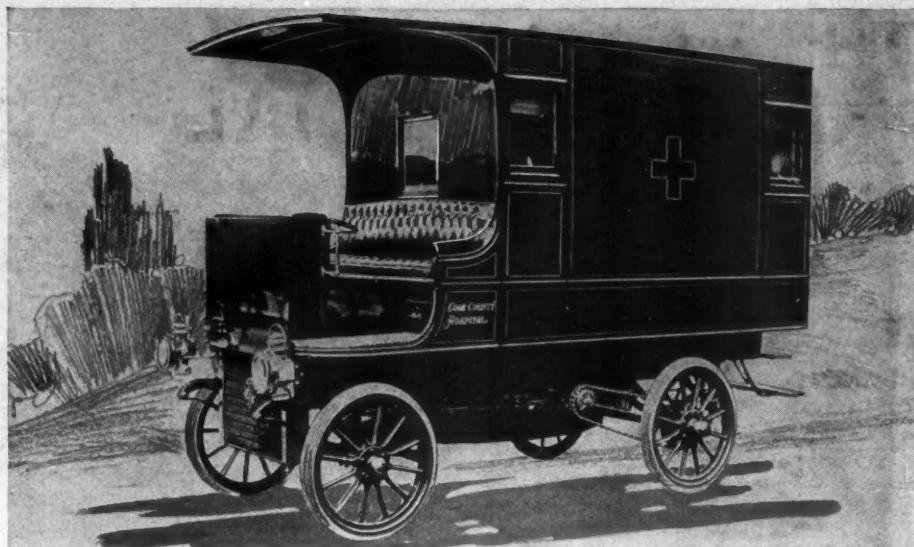
SOME COMMERCIALETTES

The board of police commissioners, Hartford, Conn., has accepted a Pope-Hartford gasoline patrol wagon after having received numerous demonstrations with the wagon of late.

Scruggs, Vandervoort & Barney Co., St. Louis, Mo., have recently installed a fleet of four model R Logan delivery wagons for their department store delivery service. By using motor deliveries for some months this concern has found it possible to make three deliveries a day instead of two, as with horses.

The Indianapolis Parcel Delivery Co. has contracted for six delivery wagons and the Gloss-Brenner-Dodge Co. as well as the Columbus grocery, also of Indianapolis, have made purchases. Three medium-load trucks have been purchased by the Bartlett Trucking Co., of Huntington. Kramer & Co., Attica, Ind., have purchased a couple of delivery trucks.

A week ago a Mitchell truck started on a run from Chicago to New York loaded with a ton and a half of drugs, the trip being made entirely for the purpose of determining the reliability of the truck on such a run as well as its economy of operation. No attempt at speed is being made. The schedule traveled on calls for an average of 80 miles a day. The truck is the regular Mitchell 1-ton model, the 50 per cent overload being carried to prove its efficiency. The route followed lies along the lines of the Lake Shore and New York Central railroad with scheduled stops at Toledo, Cleveland, Erie, Buffalo, Rochester, Syracuse, Utica, Albany and Poughkeepsie. The truck is fitted with a 20-horsepower four-cylinder motor, three-speed transmission, 108-inch wheelbase and 30 by 3 and 3½-inch tires in front and rear. Its load-carrying compartment is 96 inches long and 43 inches wide.



RAPID AMBULANCE FOR COUNTY HOSPITAL, CHICAGO

The Logan Construction Co. is circulating some valuable information on the relative cost of installment and maintenance of motor delivery as compared with horse delivery. The estimated cost of the one-horse delivery is as follows:

Wagon cost	\$150
Horse cost	150
Harness cost.....	25

Total	\$325
Board, stabling and shoeing per month.....	\$20
Driver's wages per month.....	60
Repairs per month.....	5
Monthly maintenance.....	65

A house which finds it necessary to carry three one-horse delivery wagons to handle its business has in them an investment of \$975 and a monthly up-keep charge of \$255. But horses require rests and vacations, and it takes an average of one and a half to two horses to keep a one-horse wagon going every day. However, reckon that it takes only one extra horse to help out the other three; this means an added investment of \$150 for the horse, and \$20 per month for board, stabling and shoeing, making a total investment for the four of \$1,125, and a monthly up-keep of \$275. Statistics from a number of sources as to the up-keep of delivery wagons yields the following results:

Cost of car complete

Gasoline and oil per month..... \$12.50
Driver's wages..... 60.00
Battery and repairs..... 2.00
Tire wear

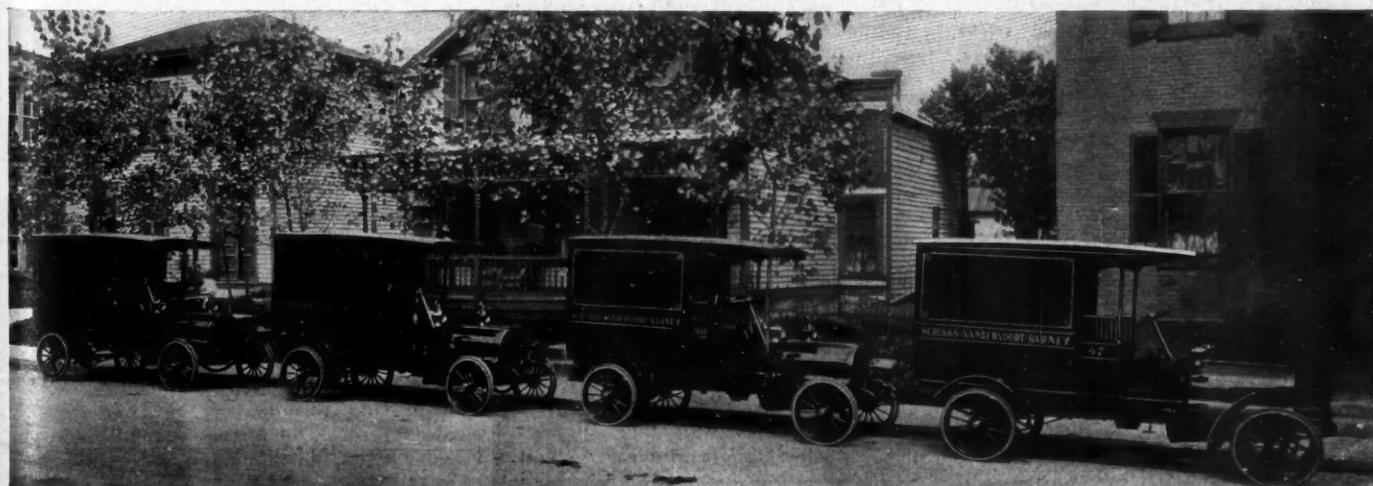
\$79.50

A motor delivery, if efficient and properly handled, should do the work of three one-horse deliveries.

Investment for three one-horse deliveries	\$1,125
Investment for one motor delivery.....	1,000
Saving on investment.....	\$ 125
UP-KEEP	
Cost of up-keep for three one-horse deliveries	\$275.00
Cost of up-keep for one motor delivery doing same work.....	79.50
Saving per month.....	\$195.50
or a total of \$2,346 per year.	

FOR HOSPITAL SERVICE

The Rapid Motor Vehicle Co., Pontiac, Mich., has brought out an ambulance especially designed for hospitals, sanitariums and dispensary departments of cities. Naturally the chassis portion of this carries the Rapid two-cylinder motor, coupled with its planetary transmission arranged for chain drive. It is geared to a maximum of 15 to 30 miles per hour. The body is full-paneled, with seven beveled glass drop windows fitted with silk pantasote curtains. Entrance is through the rear and along each side is a full-sized emergency cot. There are seats on the inside for three attendants, one in the center of the forward end of the car and one at the foot of each cot. Under the driver's seat are compartments for supplies. A gong is fitted, tires are 3-inch solid rubbers.



FLEET OF LOGAN LIGHT DELIVERY WAGONS SOLD TO SCRUGGS, VANDERVOORT & BARNEY, ST. LOUIS, MO.



AMONG THE MAKERS AND DEALERS



Elsworth Colt Secretary—Harold J. Elsworth, of Irvington-on-the-Hudson, has been elected secretary of the Colt Runabout Co.

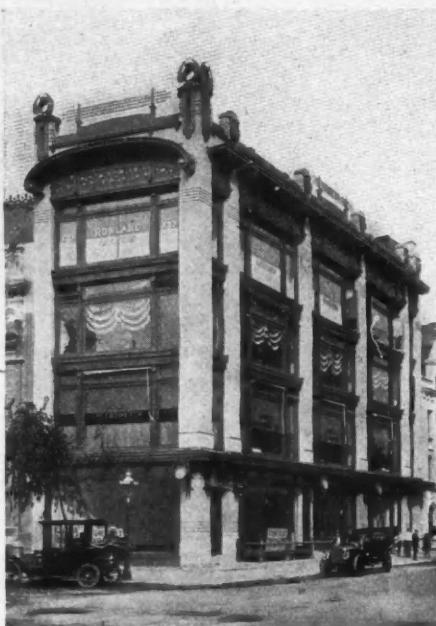
Murch in for Himself—Harry Murch, for a number of years with Alvan T. Fuller, who handles the Packard and Cadillac cars in Boston, is going into business for himself October 1. He will be associated with Mr. Hidden, of Fitchburg, and the two will handle Cadillac and Peerless cars in Worcester county, Massachusetts.

Will Handle Three Lines—The American Motor Car Sales Co., with headquarters at 2230 Broadway, New York, has contracted to sell the entire output of three Indianapolis factories manufacturing the American, Overland and Marion cars. The officers of the company are J. N. Wyllis, president; Frank F. Weston, treasurer, and T. P. C. Forbes, sales manager.

Branch in Washington—The Motor Car Co., heretofore a branch of the company of the same name in Baltimore, has been incorporated under the name of the Motor Car Co. of Washington, D. C., by A. Stanley Zell, of Baltimore; Wallace C. Hood and Hugh B. Rowland, of Washington. The capital stock is \$10,000. Mr. Hood will continue as manager. The salesroom at 1315 New York avenue will be retained and the company will continue to handle the Peerless, Thomas and Stevens-Duryea.

Testing Peerless Six—Following the flight of the new six-cylinder car from Cleveland 10 days ago on a demonstrating trip through the east, reports have been received at the factory over the interest displayed in all the cities through which this car passed. The route selected by the party is over the roads made famous by the Glidden tour of this season. No effort was made for any remarkable speed, the trip being made purely as a pleasure and demonstrating trip. C. H. Burman is driving this car through the east.

New Pierce Place in Gotham—The Great Arrow has a new home in New York city. The Harrolds Motor Car Co., agent for the George N. Pierce Co., of Buffalo, moved this week into the new building that has just been completed for it on West Fifty-fourth street, just east of the Automobile Club of America, at 233-237. It is a four-story and basement steel and concrete building with a frontage of 60 feet. The new building is devoted exclusively to selling, equipping and repairing Pierce Great Arrow cars, no machines being taken in storage. The first floor is devoted to salesroom and offices; the second to chauffeurs and sundries; the third to adjustments and tire and body fitting, and the fourth to a big repair shop employing fifty-five men and equipped to



NEW HOME OF JONES SPEEDOMETER IN GOTHAM
entirely rebuild a car. The Harrolds building now ranks with the largest, handsomest and most complete in the city devoted to the sale of motor cars.

Chauffeurs Go in Business—A novel renting company has just been formed at San Francisco. Ten chauffeurs who have saved their money have formed a corporation and bought ten cars for rental purposes, all Thomas Flyers.

Gilmore Back in Boston—Clarence Gilmore, who succeeded his brother Ernest as manager of the Boston branch of the Rambler, and later went with the Knox company as sales representative in the west, has returned to Boston, where he has become affiliated with the White company.

Crude Oil Motor Patented—It is reported that a new motor for crude oil, and for which patent application has just been made in the United States, is being exploited in Switzerland and Austria, a plant for manufacturing the motors being in course of erection at Kresweil, canton of Thurgau, Switzerland. The inventor, an engineer named Oberhausli, makes his headquarters there. The improvements claimed for the motor are that it will burn any kind of oil, especially the cheapest crude oil, with perfect combustion and decreased consumption as compared with ordinary types, obviating clogged cylinders and evaporating pipes, with consumption of crude oil, according to motor size, of from 7.05 to 7.8 ounces avoirdupois per horsepower hour. Crude oil costs in Switzerland from \$1.60 to \$2 per 220 pounds. The benzine used at present in nearly all classes of motors costs about \$6 for the same amount. A 12-horsepower trial motor, charged with at least 6 horsepower

and consuming per day of 11 hours 39.6 pounds of crude oil, has been running about 4 months in Vienna without cleaning being required.

Bowman Stevens Agent—J. W. Bowman, who has taken the Boston agency for the Stevens-Duryea, has opened new quarters on Boylston street, where he has a large building in which to show the various models of that line.

White in Garden Show—The White company announces that this year the White steamers will be exhibited at the show of the Association of Licensed Automobile Manufacturers. For the last 2 years the White steamers have been exhibited at the unlicensed show.

Agency Now a Branch—The G & J Tire Co. has opened a branch for the sale of its products in Buffalo at 912 Main street under the management of Frank Berrodin. The G & J Tire Agency, 9 Huron street, is no longer distributor of the G & J product.

New Hub Garage—Another new garage has been opened in Boston, known as the Copley Square garage. It is a large, commodious place and already it is being well filled. The location is near the Back Bay railroad station and it is convenient to all sections of the city, particularly the motor section of the Hub.

On a Berliet Jaunt—The first of the 1908 Berliet six-cylinder cars started from the American Locomotive Automobile Co.'s headquarters in New York last Thursday with H. C. Townsend, who drove the perfect score Berliet in the Glidden tour, at the wheel. The passengers were: Arthur N. Jervis, press agent; F. M. Hoblitt, of the selling staff; B. C. Buxton, secretary-treasurer of the W. W. Shaw Co., the company's Chicago agent, and Enoch Rector, a guest. They will make the run direct to Chicago, after which St. Louis, Indianapolis, Cleveland, Buffalo, Pittsburg, Philadelphia and other cities will be visited.

Wayne Directors Elected—At the directors' meeting of the Wayne Automobile Co. held last week C. R. Wilson and B. F. Everitt, of the Wilson Body Co., were elected to the directorate of the company. The change was brought about largely through the death of Roger J. Sullivan, formerly an active member of the firm. Officers were then elected as follows: President and general manager, B. F. Everitt; chairman of the board and secretary-treasurer, Charles L. Palms; vice president, J. B. Book; consulting engineer, William Kelley. Mr. Palms retains the same financial interest he always has held in the Wayne company and will devote all the time he can to the general work of the concern. New agencies that will handle the Wayne

Thirty have been closed as follows: A. L. Stanfield, Edgar, Ill.; J. L. Mott Co., Trenton, N. J.; T. S. Everitt Land Co., Redfield, S. D.

C. R. Newby Changes—Charles R. Newby, who has been with the Indiana Automobile Co. for the last 2 years, has been appointed manager of the Boyd Automobile Co. in that city. Prior to locating in Indianapolis Mr. Boyd was a prominent business man in Marion.

B. L. M. Secures More Room—The manufacturing facilities of the B. L. M. Motor Car Co. have been greatly increased by the acquisition of a building adjoining its present factory in Brooklyn, which gives a total floor space of over 45,000 square feet. In addition a building 60 by 100 feet is being erected in the rear of the present buildings, which will be used for assembling. It has been decided to limit the output of B. L. M. cars for 1908 to 250.

Pope Authorized to Borrow—An order has been filed in the federal court in Indianapolis authorizing Albert L. Pope, as receiver for the Pope Motor Car Co. in Indiana, to borrow \$50,000, the rate of interest not to exceed 7 per cent. The order was signed by Judge Peter S. Grosscup, of Chicago. The money is to be used to carry on the work at the local factory, make up the pay roll and buy material necessary to complete work under way. The loan will be secured by an issue of receiver's certificates, it has been announced.

Royal Election—At the annual meeting of the stockholders of the Royal Motor Car Co. the old board of directors was increased by the election of George H. Worthington, president of the Cleveland Stone Co., and F. L. Alcott, vice president of the Diamond Portland Cement Co., the old members re-elected being Daniel Shurmer, E. D. Shurmer, S. F. Haserot, H. A. Kelley, K. F. Gill, W. J. Grawne, E. S. Reese, K. V. Painter and T. F. Newman. At the meeting of the board following the stockholders' meeting the following officers were elected for the ensuing year: E. D. Shurmer, president; Daniel Shurmer, vice president; S. F. Haserot, chairman;

A. D. Hatfield, secretary and treasurer; Robert Jardine, engineer. The company has just completed moving into its new plant, which is now finished.

Making Motor Buggies—The De Schaum Automobile Co., of Buffalo, is manufacturing cars which, it claims, will meet the growing demand for gasoline motor carriages. The company announces the cars are not built for racing and that 12 miles an hour is their limit.

Rents S. & M. Place—With a view of securing more convenient and commodious sales quarters, the New York branch of R. M. Owen & Co. has leased the property at 1759 Broadway, which was formerly occupied by Smith & Mabley. The Owen company will move from its present quarters on or before October 1.

Peerless Line for 1908—The Peerless cars for 1908 will be of three standard models; a 30 and a 45-horsepower four-cylinder and a 57-horsepower six-cylinder. The new 30-horsepower has a quarter-inch larger bore to its cylinders than the smaller model of this year, giving 4½-inch bore and 5½-inch stroke. The wheel base is 9 inches longer than this year, being 118 inches. It provides for a seven-passenger body and at the same time sets the radiator 5 inches farther back, placing it directly over the front axle. The water pump is gear-driven and the fan is friction-driven by bevel gears. In addition to the coil, commutator and single battery used this year, there will be a low-tension magneto. All driving parts have been increased in dimensions. The 45-horsepower model will be the same as the 1907 car, with the addition of a magneto as part of the regular equipment and an option of 36 or 34 inch wheels. The new six-cylinder 57-horsepower model A. L. A. M. standard, has cylinders of the same size and construction as those in the 30-horsepower four-cylinder car. It has a wheel base of 133 inches and seats seven passengers. Heretofore the Peerless has been sold in Cleveland through agents, but this year it will be handled from the factory. B. F. Kinney has been made local sales

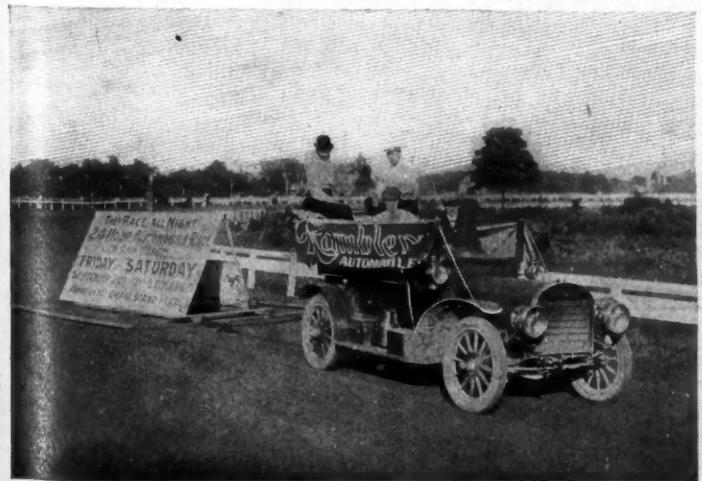
agent, with headquarters at the factory. The first floor of one of the new buildings at the new plant will be devoted to garage and repair purposes.

Inspect New Pierce Models—The 1908 models of the Pierce-Arrow were recently inspected in Buffalo by a number of agents of that company. It is said that the agents gave orders for upward of \$5,000,000 worth of machines. It is reported that a large percentage of the orders were for six-cylinder models.

Once More the Motor Car—The Wisconsin state fair people have improved on the old-time method of scraping the track by means of a horse-drawn drag. A. R. Miller, of the Ramblor Garage Co., of Milwaukee, suggested that a motor car be employed to haul the drag and the result was that one car did the work in 3 minutes where it used to take two teams about 20 minutes to do the work.

King Joins De Luxe—H. S. King, formerly secretary and treasurer of the H. C. Stratton company, New England distributor for the American Mercedes and the De Luxe, has joined the selling force of the De Luxe Motor Car Co. in Detroit. Mr. King still retains his interest in the Boston concern as a stockholder and director, although resigning from the active position of treasurer of the H. C. Stratton company, of Boston.

Now the Thomas Detroit—Word has gone out to all of the representatives of the Thomas cars that hereafter cars made by the E. R. Thomas Detroit Co. will be known as the Thomas Detroit instead of the Thomas Forty. The change is made, it is explained, primarily for the purpose of avoiding the confusion between the names Thomas Forty and Thomas Flyer that has been apparent during the past year. Both cars are distinctive in design and outline and are made in separate plants, the Thomas Detroits in a new steel and concrete building in Jefferson avenue, Detroit, and the Flyers at Buffalo. The Detroit Thomas cars are, however, marketed by the E. R. Thomas Motor Co., of Buffalo, as has been the case previously.



RAMBLER USED TO PULL DRAG ON MILWAUKEE TRACK



PEERLESS 1908 SIX-CYLINDER ON DEMONSTRATION TOUR

THE READERS' CLEARING HOUSE

USING PICRIC ACID

New Smyrna, Fla.—Editor Motor Age—In looking over some old copies of Motor Age I came across the following: "I recently tried the experiment of using picric acid in gasoline as described in Motor Age. After following the directions and carefully straining the gasoline, I put it in the tank of my motor bicycle. The motor fired on the first turn of the pedals, and I was at once convinced that the power of the motor was increased, as the noise from the exhaust, due to the explosions, was nearly twice as loud as before. I immediately started out to try the stiff hill which I never climbed before without pedaling. The machine took me up the hill in great style with my feet off the pedals all the way up. I was so pleased with the results that I ran until my gasoline tank was almost empty, and then had to get back home on common gasoline, and the difference was surprising. I used up all the picric-gasoline without a single misfire or any signs of the spark-plug sooting." Will you please send me directions how to use or mix picric acid in gasoline so as to increase the speed or power of a gasoline motor?—George D. Dewey.

Motor Age answered this question last week. It does not advise anyone to use picric acid, for it has been found to have a corrosive effect on the valves, etc. The usual process is to employ as much picric acid as the gasoline will dissolve, usually a small quantity.

WORD WAS DROPPED

New York—Editor Motor Age—In publishing my letter regarding speed change and reversing gears in Motor Age of September 12 a single word was left out of one sentence and its meaning completely changed. I am made to say "that vehicles costing more than \$500 constitute but a small percentage of the cars used," whereas what I did say was that they "will constitute but a small percentage of those used." I hope you will publish this correction and thank you for the space you have already given me on this subject.—A. E. Osborn.

USED MIXED FUEL

Columbus, O.—Editor Motor Age—The following is copied from the Ohio State Journal and recites a trip made by myself and two sons on mixed fuel. I am still using it and like the results better than those from gasoline alone: "Charles Bell and sons, of Columbus, O., made a very successful tour last week in which coal oil and gasoline—in proportions of a quarter and three-quarters, respectively—were used as fuel. The tour was made through Ohio and Indiana and covered about 500 miles. The experiment was

made with a four-cylinder air-cooled machine on an average of 15 miles to the gallon. The advantages claimed by Mr. Bell are less heat, less vibration, more power and better cylinder lubrication." This experiment published in the Motor Age may please other users of motors as it has myself.—Charles L. Bell.

LOZIER GEAR RATIOS

Lexington, Va.—Editor Motor Age—Kindly answer the following in the Readers' Clearing House: In a 60-horsepower Lozier type E touring car, weighing 3,590 pounds, 36-inch wheels, having sliding gear transmission giving four speeds forward and reverse, what are the proper gear ratios on the four different speeds and the reverse?—J. H. L.

The actual gear ratios of the type E Lozier are as follows:

First speed and reverse.....	$\frac{1}{2} \times \frac{9}{10}$
Second speed.....	$\frac{1}{2} \times \frac{9}{10}$
Third speed.....	$\frac{1}{2} \times \frac{9}{10}$
Fourth speed.....	direct

As the fourth speed is direct, each of the lower transmissions is through two pairs of gears, the first being sliding and the second in constant mesh. The ratios of the two pairs are given by the two fractions opposite each speed. The bevel gears have a reduction of 22.36, which is the only reduction of the direct drive. The total reductions are, therefore, as follows:

First speed and reverse... ...	$0.269 \times \frac{9}{10} = 0.165$
Second speed.....	$0.621 \times \frac{9}{10} = 0.378$
Third speed.....	$0.726 \times \frac{9}{10} = 0.485$
Fourth speed.....	$1. \times \frac{9}{10} = 0.611$

This does not include the reduction due to the sprocket chains, which is probably about $\frac{1}{2}$, though definite information on this point is not at hand.

TWO-CYCLE MAKERS

St. Louis, Mo.—Editor Motor Age—Please tell me through the Readers' Clearing House the names of firms making two-cycle motor car engines at the present time.—George A. Hipolite.

Knox Motor Truck Co., Springfield, Mass.; Reliance Motor Truck Co., Detroit, Mich.; Lackawanna Motor Co., Buffalo, N. Y.; Simplex Motor Car Co., Mishawaka, Ind.; Elmore Mfg. Co., Clyde, O. These concerns manufacture trucks and cars fitted with two-cycle motors, except the Lackawanna, which manufactures this type for the market.

WHO HAS IT?

Dixon, Ill.—Editor Motor Age—Can you give me the names or tell me how I can get them of motor car manufacturing concerns who put 34-inch, or higher, wheels with solid rubber tires on their machines? I want a runabout with wheels not less than 34 inches high and with solid tires. The motor buggies I have seen are too noisy to suit my tastes.—B. E. D.

MORE STEAM INFORMATION

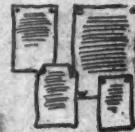
Chicago—Editor Motor Age—Dear Sir: In reading your Motor Age of September 12 we notice an article by C. F. M., of Springfield, Mass., on the steam valve arrangement of the compound engine in response to questions asked by Searcher from Sacramento. As we are sure Searcher is still in search, we would like to help him possibly through the medium of C. F. M. In a cross-compound engine, using a piston valve in the high-pressure and a common D slide valve in the low-pressure should the high-pressure piston valve leak it would necessarily increase the receiver pressure above its predetermined point, thus throwing a severe back pressure on the high-pressure engine, increasing the work done by the high-pressure engine and establishing an unbalanced proposition. The steam which has leaked past the high-pressure piston valve is admitted to the low-pressure piston at an increased pressure accomplishing more work than the low-pressure engine is designed for. As to this being economical, the leakage of steam is accompanied by wire-drawing and higher exhaust pressure from the low-pressure engine, both of which are sources of great loss and would otherwise not have occurred.—Edwin de Haven Caldwell, Webb Jay Motor Co.

DIFFERENCE IN POWER

Bismarck, N. D.—Editor Motor Age—Can you give the reason, through the Readers' Clearing House, why the two-cylinder Buick motor, 4½ by 5 inches, gives more power than the two-cylinder 5 by 4½ motor, of other makes? Does the half-inch more stroke give it more power than a half-inch more bore? I have a 5 by 4½ opposed in my car and I cannot get the power that Buick motors have. Give me the name and address of the firm that advertised a friction transmission in Motor Age a few weeks ago, as I cannot find its advertisement.—F. Jaszkowiak.

A motor having the stroke shorter than the bore is considered less efficient than a motor with a stroke slightly longer than the bore. Undoubtedly this fact has something to do with the difference between the power of the two motors. The Buick company credits a part of the power of its motors to special care taken in fitting the piston rings and to correct arrangement of the inlet and exhaust piping and timing of the valves. Other possible factors influencing the power development are the style of carburetor used, the valve diameter and possibly the arrangement of the valve chambers. Friction transmissions are made by the Black Mfg. Co., Fort Wayne, Ind., and the Bendix Mfg. Co., Chicago.

BRIEF BUSINESS ANNOUNCEMENTS



Port Huron, Mich.—The General Mfg. Co. has been organized to make different parts of a motor car.

Akron, O.—The Firestone Tire and Rubber Co. is to erect another addition to its factory.

Cleveland, O.—The Standard Automobile Co., of 1206-1212 Huron road, has taken the agency for Buick.

Newark, N. J.—A new top manufacturing establishment has been opened at 290 Halsey street by F. Matt & Co.

Newark, N. J.—C. F. Sinn, of 48 Ingraham place, has plans for a garage to be erected in the rear of his property.

Buffalo, N. Y.—Plans have been filed for the erection of an addition to the storage building of the George N. Pierce company.

Marshall, Mich.—The New Process Steel Co. has finished the addition to its plant and it may add another building before long, it is said.

Pittsburg, Pa.—Application will shortly be made for a charter for a new company to be known as the Central Automobile Co., of Pittsburg.

Philadelphia, Pa.—Plans have been filed for the erection of a garage for Charles Young & Son. It will be situated at Forty-second and Chestnut streets.

Trenton, N. J.—Work is progressing on the new garage for J. L. Brook on Canal street. James Mulrey, formerly with the Walter Automobile Co., is to be the manager of the new concern.

Albany, N. Y.—The Jenkins Motor Car Co., of Rochester, N. Y., has incorporated with a capital of \$100,000. J. W. Jenkins, L. H. Whitbeck, George W. Todd, of Rochester, are the directors.

Syracuse, N. Y.—Since taking up the manufacture of bodies the Schubert Brothers Gear Co. has been obliged to enlarge its plants. Plans have just been filed for the erection of a new dry kiln.

Racine, Wis.—The Racine Novelty Co., top manufacturer, has been sold to an eastern syndicate for \$150,000. George Jaegers and Frederick Baudin, managers, have renewed their contracts for 5 years.

Trenton, N. J.—A petition in bankruptcy has been filed by Wilsey & Everly, of New York city, against the Canton Electric Traction Co., of 34 Nassau street, Newark. The concern manufactures electric motors.

Seattle, Wash.—The Capital Hill garage is completed. It is a two-story building on ground 103 by 77 feet, on Ninth avenue and Mercer street, and is built in the Swiss Chalet style. On the ground floor is storage space for about fifty cars, office and salesroom. On the upper floor are ma-

chine shops, pit and storeroom. O. R. Adams, formerly with the Seattle Electric Co., is manager.

Lansing, Mich.—The Oakland Motor Car Co., of Pontiac, has been incorporated with a capital stock of \$200,000.

Pittsburg, Pa.—Charles McLaughlin has plans for new garages to cost \$10,000 to be built on East Liberty street, where the former place was destroyed by fire.

Lansing, Mich.—The Reo Motor Car Co. amended its articles of incorporation, showing the full amount of capital stock, \$1,000,000, authorized has been issued.

Newark, N. J.—A new agency is to be established here under the name of the Brush-McLaren Motor Co., which will act as representative for the Brush.

Allegheny, Pa.—Plans are being prepared for the erection of a brick garage for the Diamond Auto Co. It will be situated on North Diamond street.

Lima, O.—William Hoyt, recently with the Winton company at Cleveland, will shortly open a garage and repair shop on Elm street.

South Whitley, Ind.—D. C. Dennison, of Chicago, is endeavoring to interest local capital in a new motor car factory. The City Commercial Club is investigating the purchase of a suitable site and it is likely that the concern will be located here. The company is to have a capital stock of

RECENT INCORPORATIONS

Davenport, Ia.—Iowa Auto and Tire Co.; capital stock, \$24,000; to deal in motor cars and to conduct a repair shop. T. Gelkers is the president and J. L. Herbert, secretary and treasurer.

Cleveland, O.—Wentworth Motor Car Co.; capital stock, \$55,000. Incorporators, F. H. Adams, J. W. Smith and W. S. White.

New York—Auto Igniter Co.; capital stock, \$25,000; to manufacture igniting devices. Incorporators, W. F. and E. B. Holcombe, and E. H. Berthold.

Albany, N. Y.—Pittsburg Motor Boat Co.; capital stock, \$50,000; to manufacture machinery and boats of all kinds. Incorporators, J. F. Morton, of Pittsburg, Pa., G. E. Pike, of Allegheny, Pa., and N. W. Thompson, of Albany.

New York—Spiral Spring and Auto Co., of New York; capital stock, \$10,000; to manufacture and deal in motor cars and supplies, as well as conducting a garage. Incorporators, A. J. Cahill, W. Neiss, and L. S. Abberley.

Tacoma, Wash.—Acme Garage Co.; capital stock, \$15,000; to do a general motor car business.

Indianapolis, Ind.—American Gear and Mfg. Co. Capital stock, \$50,000. Directors: Charles G. McCurthe, Frederick Mathews and John E. Mathews.

Buffalo, N. Y.—Empire Sales Co., capital \$20,000, to deal in supplies. Incorporators, Herman H. Graessen, of Orchard Park; William H. Whitlock, of Trenton, N. J.; Edward B. Richardson, of Cortland, N. Y.

Muncie, Ind.—Crozier Automobile Co., capital stock \$10,000. Directors: Leo S. Ganter, Edward G. Clarke and Cary Crozier.

\$300,000, and will manufacture motor trucks and delivery wagons as well as pleasure cars.

Utica, N. Y.—The Utica electric garage has been opened at 128 Columbia street and will accommodate ten electric machines.

Newark, N. J.—The Pope Automobile Co., of Cedar and Halsey streets, has been made sub-agent for the Summit Automobile Co.

Columbus, Ind.—D. Ogden is planning to open a garage, salesroom and repair shop here. F. T. Crump has been given the contract to erect a building on Franklin street.

Dallas, Tex.—A new company will shortly open for business at 201 Akard street. F. S. Thompson is the president, A. L. Hundley secretary and D. A. Templeton treasurer.

Eaton, O.—E. R. Shaver is about to open a garage and repair shop. He has rented the Kline property, opposite the registrar's office, and will have his headquarters there.

Philadelphia, Pa.—L. E. French has severed his connection with the Girard Motor Car Co. The company is to be entirely reorganized and a new board of directors will be elected.

Springfield, O.—The Oscar Lear Automobile Co. expects to start manufacturing cars at once. A. H. Worthington and John J. Hopps have been elected directors to represent the local stockholders pending the annual meeting.

Pontiac, Mich.—Further detail regarding the Oakland Motor Car Co. is that C. M. Murphy, head of the Pontiac Buggy Co., will be general manager; Alanson P. Brush, of Detroit, owner of the patents and devices, will be the designer.

New Haven, Conn.—E. A. Cahrer and A. A. Mayer have formed a partnership under the name of the Eastern Auto Tire Repair Works. They have opened an establishment at 481 State street, and will run a general jobbing and repair works.

Minneapolis, Minn.—The Ranger-Barrett Co. has purchased the interest of W. C. Thornhill and leased his garage at 308-310 Tenth street. J. T. Ranger and C. L. Barrett are members of the company, and will add other machines besides the Frayer-Miller.

Springfield, Mass.—Plans are being considered for a settlement between the Knox Automobile Co. and its creditors, and it is likely that stock will be issued to cover the indebtedness. A meeting was held last week, with Robert W. Day as chairman, and it was proposed to issue new stock to the amount of \$500,000.



FROM THE FOUR WINDS



After a Boulevard—E. R. Thomas, of Buffalo, has been appointed chairman of a committee which will prepare preliminary plans for the establishment of a proposed boulevard between Buffalo and Niagara Falls in the near future.

Pittsburg Growing—How fast motor cars are increasing in Pittsburg is shown in the report of the city controller for the first 7 months of 1907. In those months there was collected as tax from owners \$7,494.25 as compared with only \$5,860.10 for the corresponding period in 1906. This is the largest gain made in any department of the city revenues.

Prohibit Cut-Outs—Promoters of racing on the Brooklands track in England have prohibited the use of cut-outs on motors. Instead the drivers can have the exhaust go into a first receiver, then to the open air through a long exhaust pipe to the back of the car. S. F. Edge is one of the strongest foes of the cut-out and declares they are unnecessary. He has experimented both ways and claims a car goes a little faster when the exhaust first goes through a receiver than it does when it is shot direct into the open air.

Connecticut Road Work—The towns of Suffield, East Haddam, Saybrook and Winchester have applied to the Connecticut state highway commissioner for an appropriation for road improvement, \$20,000 being asked for by each town. Where the grand list totals less than \$1,250,000, the towns will have to appropriate an eighth of the amount granted by the state, and where the taxable property exceeds a million and a quarter the town must raise one-quarter of the expenditure. The highway commission has done some good work of late and many bad spots have been very much improved, particularly those on the east side of the river.

Garden Show Plans—Last year there were over 10,000 square feet of floor space added to the Madison Square garden show over the previous year, while this year it was necessary to add 10,000 more, or 20,000 over the 1906 show, to accommodate the increased demand for space. In the number of exhibitors, the show will surpass those of former years. Last year there were 255 individual exhibits, while up to the present time 302 exhibitors have applied and been allotted space and it is expected that with the additional floor space available there will be at least 325 exhibitors. Plans were filed last week with the New York superintendent of buildings for refitting the garden and work on the elevated and mezzanine platforms and the first balcony which will be converted into exhibition space will begin at once. With the additional space the garden will have over 70,000 square feet



CONNECTICUT TIRE ANNIHILATORS

floor space, which includes the main arena, the elevated and mezzanine platforms, first balcony, the exhibition hall and the concert hall. The basement this year will be entirely remodeled which will give an additional number of square feet.

Work of Motorphobes—A photograph taken in the east shows tire annihilators rigged up by a Chester, Conn., youth to destroy motor car tires. W. H. Scoville, of Hartford, Conn., ran on to the contrivances shortly after they had been placed in the road and badly cut three of his tires.

On Night Running—S. F. Edge, of England, claims the result of very careful tests with six-cylinder Napiers on Brooklands track, where the road conditions are always the same, seems to prove very conclusively that if one has an engine with a badly designed water jacket, insufficient radiation or a carburetor feeding too rich a mixture to the engine, the car runs a little better at night. "If, however, the engine is correctly designed, with proper cooling surfaces and with the correct mixture to the engine, it runs just as well in the daytime as it does at night," adds Mr. Edge.

Baltimore's Show Dates—Thanksgiving week has been selected as the date for the annual show in Baltimore by the Automobile Dealers' Association. This date is much earlier than those of the first two shows, both of which were held after the Christmas holidays. The last one was held from January 21 to 26 of this year. The dealers decided on an early date for the reason that the other two exhibitions were not quite so successful as they anticipated and they blame this fact entirely to the late dates. It is more than likely that the dealers will fall back on the big Fifth regiment armory as the place for the show this year. The members of the Auto-

bile Club of Maryland will more than likely co-operate with the dealers in conducting the show, although they have not as yet made any statement to this effect.

Lights for a King—King Edward VII. of England has just ordered a pair of 10-inch Bushmore headlights for his new 60-horsepower English Daimler. The lights in question are of the plain front type, nickel-plated and handsomely finished.

Bisons After Country Home—The Automobile Club of Buffalo is considering the plan of establishing a country clubhouse about 20 miles outside of this city. President Seymour P. White has announced that Dr. John S. McFarland has been appointed chairman of the committee which will investigate the proposition.

After Tag Fees—Some 800 owners of Indianapolis, who have defied City Comptroller George T. Breunig and the city officials, who decided that an annual license must be paid despite the recent state law, are about to be arrested, according to Breunig. To date only 416 of the 1,200 Indianapolis owners have paid the \$3 license fee. The rest are not greatly frightened over Breunig's statement, as they believe that the state law expressly prohibits municipalities from exercising any ordinances conflicting with the state law.

Americans Abroad—An enterprising consular officer of the United States government stationed in Switzerland estimates that there are now in Europe 8,000 American touring parties in motor cars. Each car carries on an average five persons, making a total of 40,000 Americans motorizing on the continent. The expense will average \$10 per day for each person, making a daily expenditure by this class of American travelers in Europe of \$400,000. The American motorist usually spends 2 months on the continent, which brings the aggregate expenditure up to \$24,000,000 for the season.

Cheaper to Rent—Hugh J. McGowan, head of one of the largest traction syndicates in the country, returned home with his family last week after a motor trip covering 5,200 miles in Europe. The trip was devoid of accidents or delays, although three new tires were necessary. Motor car hire in Europe, according to Mr. McGowan, is about 25 per cent less than in this country and he found it more satisfactory to hire a car there than to take his own car with him. From London the party went to Paris for a stop of 8 days, then continued through France and Switzerland and on into Germany. The trip included a tour of Scotland and Wales, and a run through the English lake district, visiting Hampton Court, Stratford-on-Avon, Warwick Castle, Kenilworth Castle, Birmingham and Chester. The worst roads

in Ireland were found better than those in this country and the finest stretch of highway was that from Stratford-on-Avon to Birmingham.

It Pays to Advertise—Five hundred postal cards were sent out by Edward M. Sicard, of Buffalo, recently, announcing the fact that his Maxwell runabout had been stolen. This distribution was not in vain because it was not long before Mr. Sicard's car was found in a Buffalo garage. The car had been driven there by two strangers, who ordered that it be cleaned and filled with gasoline. As the machine needed cleaning, Mr. Sicard raised no objection to paying the bill.

Effective Sign—H. P. Maxim, who will shortly begin the manufacture of motor cars in Hartford, Conn., is taking life easy now and devotes most of his time looking the roads over and touring. Naturally when he has much spare time he observes things a little more keenly than he perhaps would otherwise. While running along the New York-Boston road through East Hartford this is what caught his eye and likewise caused him to bring his car to a stop: "Two miles of dusty road to Hartford center. Keep on your leather blenders until you enter. Be fair, slow down, and keep in mind, we have to eat the dust you leave behind."

One-Day Meet Instead—The Chicago Automobile Club, because of the clash of dates with Morris park and for several other reasons, has decided not to attempt to run a 24-hour race in connection with its contemplated meet next week. Originally the meet was framed up around the match race between the White steamer and the Coey-Thomas, but when the enlarged racing board took hold it was decided to make the 24 an open one. Neither the White people nor Coey, it is said, showed any disposition to enter, and the Matheson was not interested, so the committee has decided to postpone the 24 until next spring and instead have one day of racing at Harlem a week from Saturday, the card consisting of a 3-mile free-for-all for runabouts \$1,500 and under, a 5-mile for runabouts or roadsters \$3,000 and under, an exhibition mile by

Webb Jay, a 3-mile motor cycle race, a members' race to test speed judgment for 5 miles, a pursuit race, a 10-mile open and a 1-hour invitation event.

Nantucket Scores—The third round in the legal fight between Nantucket and F. J. Tyler, of Boston, was won by Nantucket when Judge Loring of the Massachusetts supreme court denied Tyler's application for a writ of prohibition against Justice Mooer's trying the case against him. Now Tyler will stand trial at Nantucket and if convicted will appeal to the superior court.

Heart in the Right Spot—Public spirited indeed is the offer of the Case brothers, of Highland Park, Conn., to donate \$1,000 for road improvement in the town of Manchester, Conn. The town also will receive an appropriation of \$20,000 from the state, and public opinion is somewhat divided as to final action, one contingent favoring improvement in one direction and the other in another. The roads of the town of Manchester, which is a prominent silk manufacturing center, are for the most part very good, the approach to Hartford, 10 miles away, being excellent.

Texans Try Motoring—For a number of years there has been a growing increase in the number of Texans who have been spending the heated summer term in Colorado's mountains. They used to go by train; now they are going in motor cars. The first Texans to use the modern means of locomotion made the trip from Dallas to Denver, a distance of 1,585 miles, in a St. Louis touring car without a mishap of any kind to the car and with the tires in fair condition. The party consisted of A. A. Moore, a lumber merchant; H. J. Schmidt and R. D. Kinney. The route ran through Fort Worth, Wichita Falls, Amarillo, Clayton, Trinidad, Pueblo, Colorado Springs to Denver. The toughest going was through the sandy wastes of New Mexico. One day only 7 miles were made through the deep sands. While crossing a lonely stretch of waste country in the territory the food supply gave out. The same day a tire punctured. The long delay in mending and the slow running caused them to be without food for 2

days. Some parts of the country they found splendid roads, enabling them to make 150 miles in a short day. They returned home the same way.

More Road Improvement—The highway between Geneseo, N. Y., and Mt. Morris, N. Y., will be improved. New York State Engineer Skene has been advertising in Albany for bids for the proposed improvements. A 5-mile stretch will be improved at a cost of \$8,000 a mile. Half the entire expense will be paid by the state under the provision of the Higbie-Armstrong law.

Help Lunatic Escape—Sympathetic Paul Smith, of the Indianapolis Motor Car Co., and his motor car unwittingly aided in the escape of an insane man last Friday afternoon. Smith was returning to the city from Crawfordsville, when he was stopped by a gray-haired wayfarer who complained of corns and incidentally asked for a ride. "Certainly," said Smith, "hop in." Twenty minutes after arriving in Indianapolis Crawfordsville authorities were in communication with the local police. The man Smith had given a ride was an escaped lunatic from Kankakee, Ill., who had returned to his home in Crawfordsville.

Makes Deal in Europe—Charles Y. Knight, of Knight & Kilbourne, makers of the Silent Knight, returned home Monday from an extended stay in Europe, where he went to demonstrate the efficiency of the valveless motor used in the Silent Knight. The trip was a success, Mr. Knight virtually closing for the sale of the rights to make the motor in England and Italy. The terms have been agreed on and plans made for the manufacture of the engine in Europe. All that remains is to finish the test of the motor which Mr. Knight began when abroad. The foreigners are reported to have been greatly pleased with the showing made and do not doubt but that it is all that is claimed for it, Mr. Knight says. It is intended by one big English concern to use the Knight motor in buses used on London streets. A premium is placed on silent running qualities and Mr. Knight thinks he has convinced them his engine has them.



NIGHT SCENE ON ENGLAND'S FAMOUS MILLION DOLLAR TRACK AT BROOKLANDS

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TEEN
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A symphony of engineering excellence, manufacturing carefulness, sweet operation and the luxury of widest range of speed on the high, with jerk and jar eliminated. Runs all the time **Like Coasting Down Hill.**

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Luxurious appointments.
Double ignition system.
Goes the route on top gear.
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Single non-vibrating coil.
Great power in reserve.
Floating type rear axle.

Sweet running engine.
Eisemann Magneto.
Double carburetor.
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Remarkable flexibility.
Mechanical valves.
Reserve gasoline tank.
Tires 36x4½.

Perfect carburetion.
Mechanical lubrication.
Multiple disc clutch.
Brakes that HOLD.
Cylinders offset.
Silent in operation.
Three speeds and reverse.
Beautiful flaring guards.

Wheel base 120 inches—long enough to be elegant, not long enough to be awkward in steering. All working parts completely housed. Car delivered to you fully equipped with 5 bow top, glass front, 5 lamps that light, gas tank or generator, horn that toots, and full set of tools that are useful.

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